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ORIGINAL ARTICLES.

CONSUMPTION CONTRACTED IN COLORADO AND METHODS TO RESTRICT ITS SPREAD.¹

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THE subject predicates the assumption that pulmonary tuberculosis contracted in Colorado forms a very important factor in our mortality statistics. It implies the existence of an indigenous disease in our very midst increasing at such a rate and assuming such proportions as to demand for its restriction energetic if not drastic measures in the way of legislative and municipal supervision. This position in its entirety I am not prepared to assume at the present time. Although heartily in sympathy with all rational methods of legitimate control, I am unable to accept the evidence presented to substantiate in the premises an alleged increasing prevalence of such cases.

It is freely admitted that consumption has been and is contracted in Colorado to some extent, and that it may be expected to originate here in the future, as in other centers of population. It is only with reference to the degree and practical significance of its presence that an unprejudiced inquiry is solicited. Attention is called to certain preliminary etiological considerations. Consumption, although a distinctly communicable disease through the almost ubiquitous distribution of the bacilli, is nevertheless acquired only by those rendered susceptible through environment, occupation, previous disease or inheritance. Unlike other diseases of purely bacillary origin, the infection is extremely slow and incremental in character, the contagion constituting a source of danger to such alone as are specially predisposed. It is only after prolonged exposure, and in some instances after repeated infection as well, that the individual resistance is finally unable to overcome the process without exhibiting the manifestations of the disease.

That tuberculosis develops occasionally in Colorado should not be ascribed, therefore, as resulting entirely or essentially from an intimate association with pulmonary invalids, nor cited as an instance of direct infection pure and simple from one person to another after the manner of certain contagious diseases. It is rather to be regarded as a natural and almost necessary incident to a greater massing of population, embracing all classes from affluence to poverty and including all conditions of intelligence and predis-

position. There must inevitably result frequent disregard of certain elementary principles of hygiene, together with gross individual neglect of most ordinary precautions.

A direct causal factor in the development of the disease within the State might be attributed to the peculiarly unfavorable occupation of a considerable class of her people. Reference is here made to the conditions incident to the everyday life of the miner, entire absence of sunshine for prolonged periods, the inhalation of an atmosphere not only deficient in oxygen, but vitiated by dampness, dust and smoke. A protracted subjection to such conditions, together with the climbing of mountains and ladders in high altitudes, and the carrying of heavy burdens cannot fail to exert a deleterious influence throughout the respiratory tract, often resulting in chronic bronchitis and emphysema, with a secondary cardiac and circulatory disturbance, and finally with remote effects exhibited in the liver and kidneys. A soil more favorable to the tubercle bacilli (and this receptivity is the practical essential for the development of consumption) can scarcely be conceived.

Another factor of considerable importance in the etiology of consumption in Colorado is the strong, inherited susceptibility of a large portion of her youthful population, born of tuberculous parents and frequently subjected in early life, when especially predisposed, to continued and undue exposure. It is assumed that, as a legitimate result of the foregoing considerations, consumption in segregated instances may be expected to develop in Colorado, direct contagion, however, failing to afford by itself a complete rational explanation except in isolated instances, which, nevertheless, are known to exist. Therefore, conceding broadly the origin of consumption in Colorado on account of certain predisposing conditions favoring its development, it is insisted at the same time that this should not be construed as constituting an argument against the further intrinsic value of the State as a health resort, but rather as an emphasis to the fact that the disease not having attained greater prevalence is a remarkable tribute to the restraining influence of her beneficent climate. The present interest attaches to the consideration of the question, Is consumption developed in Colorado increasing from year to year to any material extent?

Upon the answer to this question depends in great measure the proper attitude of the profession with reference to a problem extremely difficult of solution and capable of offering, at present, honest differences of opinion. The subject is one of momentous importance with a vital relation to our resident population and to pulmonary

¹ Address delivered by invitation before the El Paso County Medical Society at Colorado Springs, 1901, and read by request before the Denver and Arapahoe County Medical Society, 1902.

invalids as a class. It is at once manifest that there rests upon the State an imperative obligation to secure adequate protection for her communities without unnecessary infringement upon the rights and privileges of her consumptives. An enormous responsibility must be assumed by the medical profession in its advisory capacity pertaining to this subject. The exhibition of apathetic indifference and ignorance is equally to be condemned with an immoderate professional attitude, tending to create an intolerant popular prejudice and to inspire exaggerated feelings of alarm. The physician should be confronted by his obligation to consumptives no less than to society. The rights of each should be accorded a wise and conservative regard. The situation demands a calm, dispassionate and judicial inquiry, the evidence presented to consist of a cold analysis of statistical facts and not dogmatic opinions or preconceived ideas, and the final verdict to be rendered in accordance with directness and credibility of testimony rather than from majority predilections.

During the past decade public attention has been repeatedly drawn to an alleged rapid increase in the number of deaths from consumption contracted in Colorado. The source has been ascribed to direct contagion, and pulmonary tuberculosis is stated to have become already an important indigenous disease in Colorado, entailing future ruinous effects upon her communities.

In 1897 in a paper¹ read before the Colorado State Medical Society, and in 1900 in an article² presented to the American Climatological Association, I took occasion to protest against what appeared to me then as a premature conclusion concerning a subject of such importance. The logic of events since that time has only tended to strengthen my views as then expressed. Much as it is to be regretted, it seems almost unavoidable in support of my position to refer as briefly as possible to portions of my previous papers. The following quotation is therefore made largely for purposes of comparison with the published conclusions of a majority committee on tuberculosis appointed by the State Society as reported at the last annual meeting.

"A review of the material offered as evidence to establish the large proportion of cases developed in Colorado to those contracted elsewhere, indicates that the chief source of information is found in the records of the Denver Health Department. In the annual report for 1896, it is stated that the number of deaths during the past year from tuberculosis developed in Colorado 'is a little more than one-sixth of the total tuberculous death-rate.' It is also noted that the percentage of deaths from tuberculosis contracted in this State has been progressively increasing. In 1893 the proportion is stated to be 11¼ per cent.; in 1894, 13.7 per cent.; in 1895, 15 per cent.; in 1896, 18.4 per cent.

"Later reports from the Health Department

show the proportion in 1897 to be 18 per cent., and in 1898, 19.7 per cent. The source of information upon which these statistics have been compiled has been the returns upon the death certificates.

"I must insist that the percentage of deaths is by no means a fair criterion of the proportion in Denver of cases said to have developed in Colorado to those contracted elsewhere. The pulmonary invalid from a distance, with hopeless prognosis, is usually advised to return to his home. Comparatively few such patients, fortunately, are permitted to die in Denver, removed from family and friends. The proportion, then, of one to six does not properly apply, as might be inferred, to the existing cases of tuberculosis in Colorado.

"It is easy to demonstrate the fallacy of the alleged rapid increase in the percentage of deaths from tuberculosis contracted here.

"It is apparent that a change may be effected in a given ratio by a change in either of its terms. In other words, the percentage of deaths from tuberculosis developed in Colorado may be increased from year to year by reason of an increase in the number of such deaths, the total tuberculous death-rate remaining unchanged. Likewise, the proportion is increased if the number developed in Colorado be constant, provided the entire death-rate from tuberculosis is diminished.

"While the figures of the Health Department show the percentage to have very rapidly increased, the actual number of cases originating in Colorado is but slightly larger for the four years, while the total number of deaths from tuberculosis is considerably less; this, of course, effecting an increase in the proportion, but possessing no further significance. Thus in 1893, the total number of deaths from tuberculosis is reported as 435, of which 49 are specified as contracted in Colorado, establishing a percentage of 11¼. The next year the total number was 377, a diminution of 58, while the number contracted in Colorado was 51, an increase of but 2 cases for the entire year. It is obvious at once that the increase is entirely insignificant, yet the proportion is published as being 13.7 per cent., a gain of 2.5 per cent. in the deaths, originating in Colorado for the year.

"An analysis of the statistics for 1895 and 1896 gives practically the same results. The number of deaths in 1896 is but two more than for 1895 and but 17 more than for 1893, in spite of an increase in that time of 26,000 in our population. Yet the percentage is much increased in 1896 on account of a diminution of 60 in the total tuberculous death-rate.

"It is of much interest to note that the statistics for 1899, furnished by the Health Commissioner, are decidedly at variance with those previously reported, and serve to some extent as an official refutation of the alleged rapid increase of pulmonary tuberculosis in Colorado.

"Despite a material increase in the population

¹ Boston Medical and Surgical Journal, Oct. 7, 1897.
² Philadelphia Medical Journal, Oct. 13, 1900.

of Denver since 1893, the number of cases specified as having developed in 1899 is but four more than in 1893, and the percentage of such cases to the total deaths from tuberculosis is but 99, about one-half of that reported for the three previous years, and less than any proportion which has been determined since 1893. The compilation of these statistics was based upon the same official sources of information and with the employment of the same methods as in previous years.

It is natural that much interest would attach to the report of the Committee upon Tuberculosis appointed a year and a half ago by the State Society, which was made public at the last annual meeting. To what extent does this report differ from the analysis of statistical data previously furnished?

The report of the State Committee on mortality statistics was based upon the returns collected by the State Board of Health rather than the Denver Health Department, during the sixteen months included between January, 1900, and May, 1901. These returns upon the death certificates were subjected to a rigid scrutiny by members of the State Health Department and the sub-committee of the State Society. An investigation conducted by different officials through the channels of another health department, and perhaps in accordance with other methods, might reasonably be expected to disclose a difference in final results entailing a possible modification of previous conclusions. It is interesting to learn, therefore, that the proportion of deaths from consumption developed in the State to the total tuberculous death-rate for the sixteen months during which the statistics were collaborated is stated to be 13.32 per cent. This chances to be the same proportion as was published by the Denver Health Department for 1894, and would fail to indicate on the face of the returns any increase whatever in such deaths during a period of seven years. As a matter of fact the proportion is about one-third less than that reported for 1897 and 1898.

Another aspect of the subject is the significance of an annual increase in the population, which was not formerly considered in the official computation of vital statistics. It has been suggested in a former article that while possibilities of error necessarily attend any system of determining the relations of indigenous consumption, perhaps no method could be more satisfactory as affording at least approximate conclusions than the proportion of such cases to the population. Accepting the figures of the Health Department relative to the population of Denver and the number of deaths annually from primary tuberculosis since 1893 as an eminently fair basis for analysis, the percentage of such deaths per one thousand inhabitants was found to vary but little from year to year, the proportion being less in 1894 than in 1893; in 1896 slightly less than in 1895, and in 1899 three per ten thousand people

as compared with three and a fraction in 1893.

Apropos of these results attention is directed to the recent report of the Committee upon Tuberculosis which states that for the first eleven months of 1900, the only time during which such statistics were compiled, the percentage of such deaths to the present population was three persons per 10,000 people. This coincides singularly with my analysis of health reports for previous years, being practically identical with results obtained for 1899 and 1893, being even less than in 1894, and presenting but trifling fluctuations in succeeding years. From this comparison it is readily seen that the committee's report again fails to demonstrate the slightest increase of indigenous consumption from the time the present agitation received its inspiration.

Still another phase of the subject is the relation of tuberculous infantile mortality to the total deaths from consumption contracted in Colorado. Further reference to my analysis of data obtained from the Denver Health Department shows that all persons reported to have died of tuberculosis developed within the State during a period of seven years up to 1900, nearly one-fourth were children under four and five years of age, of whom 85 per cent. died of tuberculous meningitis. In this connection it is noted that the Committee upon Tuberculosis reports a series of 76 cases concerning which special detailed information was obtained. To what extent does this report bear out previous results? Sixteen were born in Colorado, of whom 6 died under one year, 3 from one to two years, and 2 from two to five years; 27, or over one-third of the entire number, were under five years of age. Manifestly in view of the special predisposition such infantile cases should not be included as instances of deaths from indigenous tuberculosis. While at first thought, observations concerning tuberculosis in the native-born appear particularly conclusive, it becomes apparent that they possess but little significance in support of the supposed evidences of an alarming and widespread dissemination of the disease through direct contagion.

A similar consideration deserving mention is that of occupation, with particular reference to the development of the disease among miners. It is found by reference to the committee's report that out of a total of 224 cases, 49, or more than one-fifth, occurred among miners, although, it is fair to add, not specifically stated as being instances of so-called miners' consumption. The vast importance attached to such a large proportion among this class, modifying as it does any superficial conclusions, is appreciated when one considers that the tuberculous element is subordinate to other pathological changes, and that the infecting process is usually inactive, occurring as a mere final development and conforming to the chronic indurated type. It is suggested that these cases showing scarcely ever an association with consumptives, but exhibiting on the

other hand constant disregard of general hygienic laws involving subsequent tissue changes and ensuring a favorable soil, should not be instanced as examples of the dangers of every-day contagion.

As bearing directly upon this line of thought the attention of the student is directed to an inconspicuous feature of the committee's report, *vis.*, the location in the State of indigenous cases. El Paso County, containing a greater relative proportion of consumptives than any other in the State, and therefore reasonably expected to yield the largest percentage, presents the remarkably small number of six cases, or about one-twenty-seventh of the whole. This is partially accounted for by the wide streets, open spaces, outdoor life, enlightenment of her communities and comparative absence of social and industrial conditions tending to diminish individual resistance. Gilpin County, with a much smaller population among whom consumptives are exceedingly infrequent and direct contagion, therefore, less likely, but whose people are comprised largely of miners devoting less attention to hygienic laws, offers a percentage nearly three times as great. That Arapahoe County, with its density of population and peculiar conditions incident to a large city, should show a relatively larger proportion of cases than do smaller towns, is assuredly to be anticipated, and by the same token is it to be placed in a different category from the preceding communities between which reasonable comparisons can be made. As illustrating in the etiology of consumption the relative merits of the theory of its purely bacillary origin through direct exposure to contagion, as opposed to the conception of a necessary degree of receptivity of the soil, it is submitted that these observations have decided value.

A factor of no inconsiderable importance to which attention was called by me in 1897 is entire absence of proof that cases reported as developing in Colorado were actually contracted here, the contention being that the mere fact of the individuals exhibiting physical signs of tuberculosis less than one year after arrival is no evidence of its having definitely originated in Colorado. This consideration is somewhat summarily disposed of in the report of the committee in the following words: "If this distinction had any value the cases pertinent to this inquiry would be limited to those persons born in the State and who have developed tuberculosis without having left its borders." I can only regard this position as an arbitrary assumption for purposes of partizanship rather than as a logical postulate sustained by reasonable thought. The report further states that it is the opinion of the Committee that the important factor to consider is the development of the disease in an apparently healthy person and that such cases have been presumed by the Committee to have been contracted here. This must appear as an unfortunate admission, for the untenability of such a position is very quickly recognized.

This attitude unavoidably implies the non-acceptance of the theory of a latent tuberculosis process and is plainly opposed to the incontrovertible testimony adduced in recent years demonstrating the extraordinary frequency of unsuspected tuberculous infection resulting solely through failure to examine thoroughly or to recognize and properly interpret physical signs. How many Colorado physicians can testify from their daily experience of individuals apparently sound, with clear eye, bronzed cheek and well-rounded proportions, yet victims of an incipient, if not active, infection. Is it not probable among the large number of people coming to this State with invalid relatives and friends, with individual resistance subsequently diminished through hardships undergone and privations endured, that some have developed an active process from an infection previously latent? If this be true, as is generally believed, it may be asked by virtue of what right should it be presumed that the development of the disease in apparently healthy people is sufficient ground to assert its origin in Colorado, without recourse to investigation and without at least a residence in the State of one or more years? Yet of the 60 cases previously alluded to in the Committee's report as coming from outside Colorado, 7 are said to have developed the symptoms before the beginning of the second year. As to condition on arrival, 7 are described as being apparently in exceedingly good health, 39 just in good health, 6 in fair health, 7 in average health and 1 with cholera. As to 22 no statement was made. In an investigation conducted along scientific lines and one of supreme importance to the profession and State, it is not what is apparent to a layman and what the committee presumes concerning which the public wishes to be informed, but as to what may lie beneath the surface and what the committee has ascertained by methods of definiteness and precision. The Committee further reports "that numerous experiments with animals have shown that animals may be as readily inoculated with the tubercle bacilli at this altitude as at a lower one. The tubercle bacillus has been cultivated with the same ease at this altitude as at sea-level, the only difference being that extra precautions had to be taken to guard against the evaporation of the media. Experiments by members of this committee have shown that climatic changes have no greater effect upon the tubercle bacillus here than at sea-level."

Interesting as these experiments are, I fail to appreciate their practical significance in an inquiry relating to the origin of tuberculosis in individuals. I am not aware that any claims have been advanced that the bacillus could not be cultivated in this as in any climate and that animals could not as readily receive the bacillus by inoculation here as elsewhere. It is well to remember that neither the cultivation of the bacillus in suitable media nor the development of tuberculosis following direct inoculation into the circulation of selected animals especially sus-

capable constitutes *per se* any valid argument concerning the practical every-day danger of contagion through the respiratory system of an individual not rendered unduly susceptible by impaired resistance.

The tenor of the committee's report as a whole leads irresistibly to the thought which is implied if not directly expressed in one of its conclusions, *vis.*, a rapid and alarming increase of indigenous cases. I am entirely unable to understand how any reasonable interpretation of official data justifies such a conclusion. If consumption contracted in Colorado be actually increasing to any extent from year to year, it remains to be demonstrated by statistical observations not as yet introduced.

Let it be distinctly understood that no negative testimony is here presented as a rebuttal of the positive claims of those with whom we are forced to differ. The position originally assumed and since adhered to is taken solely from the analysis of their own recorded, official statistics, the authenticity of which has never been disputed and the logic of which must remain irresistible. It is freely admitted that clinical reports from conservative and painstaking observers add indubitable testimony from time to time of the existence of indigenous cases. That a more interested attention is being devoted to the investigation and report of such cases is certainly a source of congratulation and gives promise of perhaps more definite future knowledge. From information thus far received, however, it would appear that in a large proportion of the cases reported there had been abundant reason for the development of the disease by virtue of marked inherited taint, the presence of some recognized predisposing cause, occupation or special exposure, and certainly does not give the impression of any cause for widespread alarm. This is, I think, illustrated somewhat by my own experience, which comprises a list of 16 cases seen in private work during a period of ten years' practice in Denver out of a series of 1,200 recorded cases of consumption kept under continued observation. This is certainly not in accord with a proportion of one to six. In five occupation may be considered justly to bear an important relation to the etiology, two being old miners, one a stone-cutter with chronic Bright's disease, one a layer of carpets constantly upon his knees and one employed in a steam laundry inhaling overheated air. With two a very reasonable doubt may be maintained as to the origin of the disease in Colorado, one having developed it six months after arrival and the other being in Sweden for a visit for six months immediately before its development. With three there is a distinct history of great exposure to direct contagion such as would seriously endanger health in any climate, both instances occurring among the poor occupying the same room and bed with another member of the family afflicted with the disease, and without the slightest regard for sanitary precautions. The remaining seven are

offered as examples of tuberculosis contracted in Colorado for which no explanation is made other than a necessary bacillary origin and a receptive soil in spite of a favorable climate, and in three conspicuous instances despite an outdoor life in the country and good family history. No mention is here made of the several cases met with of tuberculous meningitis occurring during the first few months of life in infants born of tuberculous parents, as these do not appear to come within the scope of this inquiry.

The report of the Committee upon Tuberculosis of our State Society discloses painstaking work and honesty of purpose reflecting all credit upon the motives and earnestness of its Chairman and active members. That some are unable to subscribe in full to its conclusions detracts in no way from its decided value as a contribution to one phase of the subject, and serves but to illustrate at least that the preponderance of evidence in its favor is not so overwhelming as to preclude a different interpretation.

Before attempting the discussion of the second part of our subject, *vis.*, what measures are necessary to restrict the spread of consumption in Colorado, I must state my position with emphasis as opposed to the sentiment so broadly implied that a special necessity exists in Colorado for such an agitation on account of the alleged rapid increase of indigenous cases. Quite to the contrary, it is contended that there is no actual justification for a tuberculosis crusade in Colorado that is not equally demanded and perhaps more so in every other State of the Union. I protest against such immoderate public utterances from medical men in Colorado as have given the impression that the future of our communities is being seriously endangered from imported cases. Certain statements have been made in medical print that "consumption contracted in Colorado is making its way to the front as a scourge to us," that "Colorado must be saved to the world as a health resort," as if in imminent peril; and an appeal is made, "that we take up arms against the common enemy." As reflecting a laudable degree of interest in medico-public affairs and disclosing perfect integrity of motive and courage to express conviction, these expressions are worthy of commendation. Yet the fact remains that the promulgation of such views is not warranted by the facts and serves only to impart erroneous and distorted conceptions of actual conditions and to add to an already inflamed and somewhat intolerant public sentiment. Although deprecating all sensationalism that tends to inspire alarm no abatement is here advocated of hearty support to be accorded to health authorities, nor of earnest, combined and advanced efforts along the lines of preventive medicine. Measures necessary for the restriction of consumption should be enforced in Colorado as in other States. This is recommended not because there is an inherently greater likelihood of its increase here than elsewhere, but because, first, it is recognized that consumption is a communi-

cable disease within certain limitations; second, that some degree of danger, therefore, exists in any locality despite favorable climatic conditions; and, finally, that it is known frequently to be preventable and hence imposes a direct obligation upon society to secure all possible means of prevention.

To this end it would seem primarily essential that uniformity of method be instituted as far as practicable in the different parts of the country. Adherence to a general concerted plan of action representing both an active educational propaganda and a campaign of responsible control should prove peculiarly effective and without prejudice to invalids or localities. Inasmuch as consumption is also known to be curable, another obligation upon the State, and perhaps no less imperative, is to make suitable provision for the care and at least partial maintenance of those afflicted and incapable of self-support. By this means also added protection accrues to society through the control thus offered of those unable in their ordinary environment to observe all sanitary precautions and who necessarily tend to become in time with advancing infection a distinct element of danger. It must be apparent that a double obligation rests upon the State of Colorado with reference, first, to the protection of her communities, and to scarcely a less extent to the comfort and welfare of her invalid class who have contributed so largely to her prosperity. The consumptive is a human being and is not to be subjected to the same ultra-scientific principles that would be accorded a guinea-pig. He is entitled at the hands of the State to every energetic provision that may save or prolong life and to every sympathetic attention that may help to alleviate suffering without having his burden made harder to bear or his chances of recovery from a most serious disease diminished.

At the same time the safety of the public must be exalted above the sensitiveness or pride of invalids even though they constitute a large part of the population. A judicious and intelligent consideration for the rights of each need inflict no hardship upon the other. The reciprocal relations between consumptives and society have been quite fully considered in a previous paper¹ and are not of especial interest in this connection other than as brief, summarizing allusions may illustrate the views then advanced concerning the valid claims of society and the measures recommended to secure protection.

1. Compulsory notification and registration of all cases of pulmonary tuberculosis; this not to imply placarding of houses or apartments, isolation or other personal humiliation, but furnishing opportunity for a degree of inspection and supervision.

2. The education of the consumptive himself in the way of instructive and persuasive appeals, resulting in securing his willing and active co-operation in the rigid observance of sanitary precautions, and submission to conservative control.

3. Special detention institutions for the ignorant or vicious who refuse to conform to established rules.

4. State sanatoria for the consumptive poor who, with such provision, can frequently be enabled to resume their duties and former positions in the community as wage-earners.

5. Segregation hospitals for the hopelessly ill and impoverished where the last comforts can be administered without the slightest degree of danger to families and society.

6. No interference with personal rights, family ties, social aspects, business pursuits, etc., except under conditions before described, unless rendered necessary by repeated and intentional infraction of prescribed regulations, quarantine and segregation otherwise being regarded as impracticable and ridiculous.

7. Periodical disinfection of apartments under the supervision of the Health Department and always after the death of the patient.

8. Prohibition of expectoration upon the sidewalks, crossings or any public place where people walk, or in any way not in accordance with the instructions either received from the health officer directly or authorized through the medium of the attending physician.

9. Separate and distinct methods of instruction directed to the general public, all official information being essentially of a reassuring nature, although not minimizing the possible dangers resulting from the presence of the careless consumptive.

10. Public attention drawn to a proper mode of living, occupation and environment, including the hygiene of the home with reference to ventilation and sunlight.

11. Formation of societies for the study and prevention of tuberculosis through whose responsible agency accurate and sustained conceptions may be transmitted to the community by means of educational literature, public meetings and addresses.

12. Government and municipal supervision of the construction of public buildings, tenement houses, factories, commercial establishments and conveyances.

THE TREATMENT OF PUERPERAL ECLAMPSIA.

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FEW conditions with which the obstetrician has to deal exceed in importance and gravity that of eclampsia. So disastrous is it in its consequences and so sudden and at times so unexpected in its onset that the resources of the physician are taxed to their utmost. It is important, therefore, that all doctors engaging in this sort of practice should be armed with a well-considered plan of treatment to carry out when the emergency arises. That "masterly inactivity" which has been commended in some other affections finds no application in this one.

I have to report the case of Mrs. —, twenty-

¹ Journal American Medical Association, Oct. 27, 1900.

eight years of age. Her first pregnancy three years ago was terminated artificially about the eighth month of gestation on account of convulsions; of which she had four before the child was delivered and none afterward. The baby lived nine days and died of inanition. After recovery the patient seemed to regain perfect health. Repeated examination of the urine failed to show the presence of the slightest trace of albumin. Upon becoming pregnant the second time her health remained good during the early months of gestation, her only disturbance being a sluggish bowel which yielded satisfactorily to the ordinary aloin, belladonna and strychnine pill. Early in the seventh month, however, she began to feel out of sorts without having any definite symptoms which she could name. After about two weeks of malaise her ankles began to swell a little and she brought me a specimen of her urine which showed a trace of albumin. The quantity passed in twenty-four hours was slightly decreased. The patient herself, understanding the significance of this from a former experience, was naturally anxious. She was now directed by suitable measures to keep the bowel, skin and kidneys active. I next saw her five days later at her home, when she complained of a sharp pain between the shoulder-blades. Her face was distinctly swollen and the quantity of urine passed during the previous twenty-four hours was very small. I directed an immediate bath as hot as she could bear for twenty minutes, after which she was to be rolled up in blankets and hot bottles put about her and a pill containing calomel and podophyllin was given. I had scarcely gotten away from the house before a convulsion occurred. A neighboring physician who was summoned in the emergency administered morphine hypodermatically and left some bromide to be given at intervals. Two or three hours later when I returned the patient had had five convulsions and was semi-comatose. A few moments later another convulsion came on, during which I bled her and gave chloroform inhalations. I then set about producing forced delivery. An assistant was secured to give an anesthetic and I began to dilate the os. It admitted only the index finger and was very rigid, so that I made practically no progress until I introduced into the cervix a pair of scissors, which I had at hand, and slowly but forcibly spread the blades. This enabled me to introduce a thumb and finger and dilate according to the method of Harris. Dilatation was accomplished in something less than an hour and the child was promptly delivered with forceps. Ten minims of Norwood's tincture of *veratrum viride* were then given hypodermatically, the pulse being 130, and five minims more were given at half-hour intervals until the pulse came down to 60. Three doses were required, the interval was lengthened to two, three and six hours, according to the need for it; after the first few doses it was given by the mouth. In addition to this, three drops of croton oil on sugar

were placed upon the tongue and an ounce of Epsom salt was injected into the bowel. Later enemata containing 30 grains of chloral and 60 grains of bromide were given at intervals. I should have employed hypodermoclysis if I had had competent assistance and conveniences for sterilizing the salt solution. Two convulsions followed delivery in the course of three or four hours. The patient made a fairly rapid recovery, resuming household duties in two weeks. The child was kept in an incubator for a month and is doing well.

The treatment of such cases should begin before convulsions occur and may be conveniently considered under (1) preventive and (2) curative measures.

1. Many theories have been advanced to account for the occurrence of convulsions, but the presence in the blood of some toxic agents is now almost universally accepted, and our treatment based on this theory should be, on the one hand, to prevent their formation, and on the other to favor their elimination. For the former the diet should be of a digestible character and one containing a minimum amount of nitrogenous matter. Milk, while it contains nitrogen and is not uniformly agreeable to patients, is probably the most universally acceptable food under the circumstances. It is made more palatable to some by the addition of lime-water or carbonated water. To favor elimination all the emunctories should be stimulated, the chief ones being the bowels, the skin and the kidneys, and in a minor degree the lungs. To secure free bowel action a dram or two of phosphate of soda may be given in a tumblerful of hot water before breakfast daily; this is to be supplemented once or twice a week by fractional doses of calomel before retiring. These drugs by their action on the liver are thought to have a specially favorable influence on the toxemia. To these add the aloin, belladonna and strychnine pill if necessary. If the phosphate of soda does not cause two or three loose or watery evacuations, then Rochelle or Epsom salt should be substituted and repeated in teaspoonful-doses every two hours until the desired result is obtained. A more energetic action can be had from time to time by increasing the dose of the mercurial.

The skin is to be kept active by hot baths of twenty minutes' duration bi-weekly or even daily, followed, if need be, by wrapping the patient in blankets and surrounding her with hot-water bottle; or hot-air baths may be given when the conveniences are at hand.

For the stimulation of the kidneys, the patient should take copious draughts of water in addition to the milk. As a mild diuretic, Bashaam's mixture is my favorite remedy. If a more active diuretic is called for, the old formula of calomel, squill and digitalis, one grain each, three times daily may be resorted to. To this I would add full doses of nitroglycerin, if the pulse be of high tension. If this be not promptly followed by a considerable increase in the amount of urine

passed it must be stopped, and at best should be given only for brief periods.

Suitable exercise in a pure air has some value in ridding the system by the respiratory channel of a certain amount of waste.

2. If, notwithstanding the measures detailed above, the renal insufficiency continue and there be evidence of increasing toxemia, such as headache, failure of vision, gastric disturbances, puffiness of the face and ankles, and high-tension pulse, then labor should be induced at once. If, perchance, a convulsion has occurred before this step has been taken, forced delivery must be resorted to at the earliest possible moment. Two lives may depend on the promptness with which we proceed. A single convulsion has caused death. To be sure, many pregnant women with albuminuria and swollen ankles pass through the periods of gestation and the puerperium without the sign of a convulsion. Such patients, however, should be most carefully watched, and if in spite of treatment evidence of toxemia increase the pregnancy must be terminated artificially and promptly.

The objection has been raised by those who oppose the plan of interference, that labor artificially induced may precipitate convulsions in one in whom the reflexes are already in a state of unstable equilibrium, and, furthermore, that the necessary manipulations may add septic infection to the already intoxicated patient. The reply to which is obvious: The patient should be anesthetized until the reflexes are abolished, and the cervix forcibly dilated, at the beginning, if need be, by instruments and later manually. When sufficient dilatation is secured instruments are to be applied to the presenting head, or version and rapid delivery may be resorted to by those who prefer it. The whole procedure is to be conducted with as much attention to antiseptic detail as any surgical operation.

Other remedies for the convulsions are not to be abandoned while the delivery of the baby is being accomplished.

For the treatment of the convulsions themselves numerous remedies have been championed by their various advocates. In a strong full-blooded person *venesection* is of the greatest value. Twelve to thirty ounces of blood may be withdrawn according to circumstances, the tension of the pulse being an index. Inhalations of *chloroform* can be used to avert convulsive seizures by giving it when the prodromal symptoms appear, such as twitching, disturbance of vision and sharp pain in the head and epigastrium.

Veratrum viride as a remedy for eclampsia has been much written about during the last few years, and my limited experience with it has impressed me favorably. It relaxes spasm and reduces pulse-rate and tension, and thus tides over an important period while the bowel and skin are being actively stimulated to eliminate the poison which is the source of the trouble. Ten minims of Norwood's tincture of *veratrum viride* may be given hypodermatically as the initial dose, and

half this quantity repeated at half-hour intervals until the pulse comes down to sixty. The pulse may be maintained at this rate by administering the drug in five-minim doses at suitable intervals. A very weak pulse would contraindicate the use of this drug.

Chloral and *bromide* are valuable adjuncts to the medicinal treatment of the eclamptic period. They blunt the nervous irritability and induce sleep. I have followed the plan of giving half a dram of the former and a dram of the latter per rectum and repeating in from three to six hours, according to circumstances.

The treatment by *morphine* I have had no experience with, except as it was incidentally given on two occasions to my patients by another physician before my arrival. The plan has not appealed to me, inasmuch as it seemed to oppose the elimination of the poison with which the patient is already overcharged. It, however, has the endorsement of high German authority (Veit). If I used it at all it would be when the aforementioned drugs were contraindicated on account of weak heart action.

The use of *normal salt solution*, either under the skin or into the bowel, fulfils two valuable indications, namely, that of diluting the poison in the blood and that of increasing the activity of the kidneys, thus getting rid of the waste products of metabolism. It is especially indicated when blood-letting has been practised. I would accord it an important place in the treatment of this condition.

To induce prompt action of the bowels two or three drops of *croton oil* on a little sugar may be placed on the back of the tongue. *Calomel* can also be administered in this way. These remedies are especially adapted to comatose patients. These are to be followed up by repeated doses of a saline or compound jalap powder, and their action supplemented by enemata containing magnesium sulphate and glycerin. The skin is to be stimulated by the hot-air bath and hot wet pack to which reference has already been made.

At this stage little attention need be given directly to the kidneys. They are already overcharged, and relief is to be sought by delegating their function to the bowel and the skin. A little later, when the bowels have acted freely, benzoate of soda and digitalis may be given for a few days, and during convalescence Basham's mixture is to be given for a considerable period.

In the foregoing recommendation, the interest of the child has had very little consideration. In the text-books the infant-mortality in eclampsia is given at about 50 per cent. The chief cause of death of the infant is asphyxia due to interference with the placental function. Other causes are placental separation, placental apoplexy and toxemia derived from the mother's blood. After the child becomes viable it is probable that *accouchement forcé*, by anticipating these casualties, will save more babies than allowing the labor to proceed during convulsive seizures in the natural way. Before viability the rights of the

mother so far exceed those of the child that the latter is scarcely to be considered in the management of the case.

VENESECTION AND TRANSFUSION IN PUERPERAL ECLAMPSIA.¹

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THE subject under consideration was forced upon my attention by the occurrence of the following accident: In the fall of 1895 I was called to treat Mrs. G., in her ninth accouchement. She was a short, puny little woman, about thirty-five years old. For four years she had suffered frequently from intensely severe uremic headaches. Her urine contained albumin and casts. With the exception of the kidneys, the organs were in a fair state of health.

On my arrival at the bedside I found a midwife in attendance, a stillborn babe and the placenta half way out. The information was volunteered that labor was rapid; that the child was born dead and remained dead in spite of all efforts at resuscitation.

The third stage was duly completed and the woman made comfortable. Half an hour later it became apparent that the patient was on the verge of eclampsia. Two typical paroxysms occurred in rapid and terrible succession before I had time to send for drugs and assistance. No more than three minutes after the second seizure, just as coma was deepening, a violent uterine hemorrhage set in, blanching the patient and—the medical attendant. This occurrence left the woman in a condition nearer God than man. Her pulse was hardly perceptible.

The uterus was hurriedly packed. After this, three quarts of warm saline solution were injected into the colon, followed by the liberal use of stimulants. In twenty minutes the woman began to rally; the pulse became notably better and the color of the face grew more natural. Coma had entirely disappeared. The patient looked around in apparent recognition of her surroundings. In three hours I felt I could safely leave her to the care of her untrained nurse. The woman made a good recovery; her confinement ended favorably on the tenth day.

At the time of this accidental occurrence, I was satisfied that the supervening postpartum hemorrhage was the main and only cause for the cessation of the paroxysms and the rapid and complete emergence from the coma. Consequently I expressed myself in favor of venesection in eclampsia when the case was reported to the Obstetric Section of the Academy of Medicine. Time and experience have fully confirmed my expectation. The additional lesson which I learned in the course of time is the enormous ad-

vantage and paramount importance of combining bleeding with infusion.

The following three cases are illustrative of the correctness of the foregoing statement:

Case I.—Mrs. L., twenty-five years old; primipara. Period of gestation, seven months according to her account. This woman had always been exceptionally well except for constipation. One morning after a distressingly difficult movement of the bowels she complained of dizziness and blindness. She went to bed. Shortly after she was seized with an eclamptic fit and within half an hour had four violent seizures. When I reached her bed she was in deep coma; face livid; bloody froth escaping from mouth and nostrils; breathing stertorous and a pulse incompressibly hard and tense.

There was no sign of beginning labor. It was difficult to reach the cervix, the os was completely closed. Urine was free from any trace of albumin when tested at the bedside. While I was preparing for venesection the patient had a fifth convulsion. The median cephalic vein was opened and twenty ounces of blood were withdrawn. Immediately afterward three quarts of saline solution were injected into the colon. The effect of the two was really magical. The woman rallied at once. The color and expression of the face became natural; the stupor vanished and the pulse though rapid was fair. During the day she received the benefit of four additional high saline enemata.

Toward evening labor set in and at midnight a living child was born without assistance. This woman passed through a perfectly normal puerperium and in ten days was ready to leave her bed.

Case II.—This case was that of a woman only nineteen years old and pregnant for the first time. The period of gestation was nine months. From her midwife, who was in attendance, I learned that the patient had always suffered from constipation and that for the last month or so she suffered from severe headaches and passed very little urine. During the second stage of labor the woman had an eclamptic fit "which lasted five minutes." The child's head being thoroughly engaged, the patient was rapidly delivered with forceps under deep chloroform narcosis; the child was living.

Exactly one hour after the expulsion of the placenta a paroxysm occurred; half an hour later, another. At this time the pulse was exceedingly hard and the urine, when examined, was found loaded with albumin. During her coma from eighteen to twenty ounces of blood were abstracted, followed, as in previous cases, by copious high saline injections. There were no more seizures after this; coma steadily and progressively diminished and the woman was out of bed in twelve days.

Case III.—This case was that of a woman forty years of age. She had been married ten years but this was her first pregnancy. The only points in her history worth mentioning are

¹ Read before the New York State Medical Association, New York County Branch, February 17, 1902.

habitual constipation and inordinate obesity. Eight hours after delivery by a colleague, the patient was seized with tonic and clonic convulsions. In six hours she had eighteen seizures. The woman was rapidly sinking. The family was most obstinately opposed to blood-letting. Every form of treatment was tried and failed—chloroform, bromides, chloral, veratrum viride and morphine—all were of no avail. After battling with this desperate attack for fully ten hours with death staring in the face, the stubbornness of husband and friends at last yielded to counsel.

A large and bulging varicose vein of the right leg was punctured and twenty-two ounces of blood were allowed to escape. This was immediately followed by a copious high enema of salt solution. The change in the dying woman's condition was at once for the better. In four hours, during which time three saline enemata were given, the profound coma visibly disappeared. The paroxysms ceased absolutely and the patient continued to improve from day to day. In four weeks she was out of bed. Her protracted stay in bed was due to anemia and a mild nephritis.

These four cases out of a total of six are cited to illustrate the effectiveness of venesection and transfusion in puerperal eclampsia. In severity they can equal any; but in the unbroken chain of rapid success there is no record to surpass them.

The abstraction of blood in eclampsia produces (1) an immediate favorable change in the woman's appearance; the cyanosis of the face; the rigidity of the muscles; the spasms and twitching which are often noticed even during the stage of deep coma, all stop at once. (2) The pulse, be it ever so hard, loses its tenseness. (3) The coma, be it ever so deep, yields either abruptly or slowly, but surely.

Transfusion (1) improves the pulse; (2) it induces free sweating and free micturition; and (3) it produces intense thirst in the awakened patient which causes her to drink copiously, and this is very desirable. These are the things which this method of treatment does and will do if you try it without bias or prejudice.

Now, for the rationale of this action: Venesection would seem to serve as a factor in partly removing the cause of eclampsia. The essential cause of the disturbance, be it urea or any irritant toxin, single or combined, is supposed to circulate through the blood. By abstracting a large quantity of the fluid the system gets rid of so much poisonous material floating therein. In addition to this unloading of toxin, the loss of blood relieves the congestion of the brain and its irritable centers which must exist during an eclamptic fit. Then comes the saline solution which not only dilutes the remaining toxins in the blood, but through its beneficial action on the kidneys and skin promotes their further escape. If this be the correct interpretation of the modus operandi of venesection and transfusion in eclampsia, then this method of treatment is not only rational but truly specific.

Venesection alone has been employed in puerperal eclampsia from time immemorial, but venesection combined with infusion or transfusion is a method and measure of comparatively recent date. The lack of the combination may, undoubtedly is, the cause of reported failures and discouragement. Blood-letting alone will meet the difficulty half way; blood-letting followed by transfusion will not only meet the difficulty, but will also remove it. Our ancestors bled everybody. They saw an indication for blood-letting in every abnormal condition. Eclampsia was no exception to the rule. Indeed the neglect of blood-letting in a pregnant woman was accounted one of the essential causes of eclampsia. At the present time venesection is a lost art, but it need not necessarily remain such. We can revive it and couple it with transfusion, and in this union we shall find a measure of great benefit to the unfortunate women who are overtaken by the greatest catastrophe of pregnancy—eclampsia.

The final point which merits allusion in this brief clinical paper is the indication for this form of treatment. Broadly speaking, the indication is puerperal eclampsia; but the question may be asked, Are there no restrictions, limitations and contraindications? Formerly venesection was only practised on the plethoric—the full-blooded with a hard or rigid pulse. Weakness, exhaustion, pallor and small pulse were considered conditions antagonistic to blood-letting. But since cases were reported which were on the verge of utter collapse and in which the liberal abstraction of blood was the only element of successful recovery, the indication seems to be all for and little against, venesection. The only precaution which one would suggest in treating the latter class of cases is that, whereas in the full-blooded the saline solution is, although not necessarily, injected into the colon and slow absorption waited for, in the feeble and collapsed cases the saline solution should be transfused directly into the circulatory apparatus.

At all events, this method of treatment can be recommended in full confidence, reason and sobriety. It is absolutely free from the zeal of the enthusiast, while it has all the support of painstaking experience.

PUERPERAL HEMORRHAGE.¹

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PUERPERAL hemorrhage may be either normal or abnormal. The former may easily become the latter from simple or gross mismanagement during or after parturition. Hemorrhage during, or soon after, the second stage of labor may be normal or abnormal. Hemorrhage of any noticeable degree prior to the second stage of labor, and excessive hemorrhages during, or subsequent to, the second stage of labor are pathological and require remedial measures.

¹ Read at the annual meeting of the New York State Medical Society, January, 1902.

The etiology of abnormal puerperal hemorrhage may be obscure or apparent. Elimination of dangerous factors in any case of labor not being assured, every obstetrician must be alert. The principal causes of antepartum hemorrhage are as follows: (1) Atony of muscles, blood-vessels, and nerves of the whole system, and especially of the uterus and its adnexa. This gives rise to hemorrhages that seem to be only a menstrual return and which are often really interruptions in commencing pregnancies. (2) Accidents giving rise to such physical disturbances as may come from excessive cohabitation, intense mental emotions and violent passions, injuries from falls, blows on the abdomen, coughing, vomiting, lifting heavy weights, etc. (3) Criminal or accidental abortions, with retention of the whole or a part of the placenta. (4) Abnormal insertions of the placenta with the varied forms of placenta prævia, from the simple adhesions of the placental border down to the inner cervical ring to the implantation of the placenta centrally over the os internum, so that after dilatation of the os the placenta only can be felt. (5) Neoplasms of the uterine body, especially fibroids. Although the rule stands good that fibroid tumors creating hemorrhage are usually preventive of conception, it often transpires that uterine myoma and pregnancy coexist, and hemorrhage may arise therefrom before, during, or after labor to such extent as to create a serious complication. (6) Ectopic pregnancies and hematomata.

Abnormal hemorrhage during labor or postpartum hemorrhage may occur from many causes mentioned among those of antepartum hemorrhage—as for instance, inertia, neoplasms, and placenta prævia; also from mismanagement of normal labor, inversion or rupture of the uterus, and tearing of the cervix and perineum.

One author in the "American Text-Book of Obstetrics," edited by Richard C. Norris, says: "Grave hemorrhage during or after the third stage of labor is rare;" also, "Postpartum hemorrhage is without exception the fault of the attendant." Such assertions savor not a little of self-adulation without large experience. A more rational statement on this subject is that of Lusk, who says: "Postpartum hemorrhage is not an uncommon event. The treatment of it is one of the most satisfactory departments of obstetrical practice."

The writer has encountered in the last year no less than five cases of excessive postpartum hemorrhage, arising from no lack of thorough watchfulness by the attendant, which would have proved fatal had there not been prompt action at the time of their occurrence. He has also seen two cases of antepartum hemorrhage complicated by uterine fibroids, resulting in early miscarriage. He is not too much to assert that normal puerperal hemorrhage, though more often than other hemorrhages, is inclined to grave results if improperly managed, should always be favorably prognosed and be so correctly man-

aged as to be a simple physiological process with no grave manifestations or results.

To a large degree the same may be said of abnormal puerperal hemorrhage. It can generally be so cared for as to insure safety to the patient and give credit to the attendant; nevertheless, when the etiological factor is either placenta prævia centralis, inversion or rupture of the uterus, or a large uterine fibroid, there is the possibility of the most skilful physician or surgeon being thwarted in his efforts, and the patient becoming the victim of most disastrous consequences.

The beginner in practice, the man not best equipped for serious emergency, the man many miles from a good consultant, or the ignorant midwife, is as liable to meet with serious cases of hemorrhage at any time as the most experienced, best qualified, and most thoroughly equipped obstetrician.

The writer's first case of placenta prævia occurred in his first year of practice on a cold January day six miles from town and from any other physician. It was a case of twins. The mother and one baby survived. The other baby was still-born. He who has faced these desperate cases alone, and has been obliged to act without delay and without deliberate preparation or assistance, knows full well that the keenest conception of the whole subject of puerperal hemorrhage, the most complete knowledge and ability to manage puerperal hemorrhage, is second to nothing in importance and in interest throughout the whole realm of the practice of medicine and surgery. To perform successfully a delicate or a capital operation of any character within the precincts of a well-equipped modern hospital is an amusing pastime compared with the conduct of an abnormal puerperal hemorrhage in private practice, unexpectedly encountered and arising from some one or more of the serious causes already mentioned.

The treatment of normal hemorrhages, either antepartum or postpartum, is most lucidly outlined and taught in many standard works on obstetrics and by a large number of professional teachers.

Directions for the prophylaxis and management of abnormal hemorrhage are most carefully set forth and most learnedly taught by the same sources of instruction; and yet it is not unappreciative or derogatory to say that there is room for more light and knowledge and greater executive skill than are yet at the disposal of a majority of practitioners.

The most favorable statistics given by hospitals, *excluding rupture or inversion of the uterus, malignant or benign growths of the organ, lacerations of the cervix or vagina, and placenta prævia*, state that mild postpartal hemorrhage occurs once in a hundred labors, severe hemorrhage once in twelve hundred cases, and fatal hemorrhage once in six thousand cases. What the fatalities may be from the graver forms excluded in this estimate cannot be readily cal-

culated. They are no doubt very large even with favorable hospital environment and the most skilled medical and surgical service.

It is easy to say we ought to do better work. There is room for improvement and there are plenty of opportunities at the front; but in this particular duty of treatment of puerperal hemorrhage it may fairly be asked, how, when, and where?

A brief synopsis of the rules for management of puerperal hemorrhage, generally taught, accepted and practised at the present time, may be helpful toward further consideration and suggestion in reference to these questions. The central idea of controlling hemorrhage, when the uterus is uninjured and no deep wounds of adjacent parts exist, is, *secure uterine contraction*. This should always be encouraged by pressure on the abdomen over the uterus, in the regular Credé method. To make provisions against abnormal hemorrhage in the simplest of cases is wise and prudent. Early in the second stage of labor have at hand a good syringe, preferably a fountain, a bed-pan, a pitcher of cold sterile water, a pitcher of hot sterile water, a bowl of small pieces of ice, a hypodermic syringe, hypodermic tablets of strychnine and of morphine, and a normal solution of ergot. Failure to control hemorrhage by usual pressure may then be followed quickly by lowering the head and shoulders, giving an injection of ergot into the thigh, a douche of hot water into the uterus, introduction of the hand, possibly of pieces of ice, into the uterus. The application of iron to the inner uterine surface is recommended by many authors, but I never use it. The faradic current of electricity if at hand may be resorted to with advantage. Pressure on the abdominal aorta will control the rush of blood in emergency. An antiseptic gauze tamponage, with a reliable nurse to hold the uterus down for hours after contraction and cessation of abnormal hemorrhage are secured, is the only safe condition in which to leave a patient during the absence of the medical attendant.

There is quite a noticeable disposition and habit on the part of teachers and writers, as well as operators at the present time, to delegate or assign to the gynecological surgeon many cases of abnormal hemorrhage that are really obstetrical cases. This is not a field that can be safely turned over at all times to the specialist alone. Every doctor who treats parturient women is liable to have thrust upon him at any time more or less responsibility concerning puerperal hemorrhage. It is gratifying to realize, as could not be realized in the earlier professional life of many who are yet in active practice, that there are well-equipped hospitals and well-qualified modern surgeons in many cities and towns, whose assistance can be secured when needed. Every recent graduate of these times and every "up-to-date" practitioner of obstetrics should be prepared at all times to conduct complicated labor cases and do minor gynecological work under

thorough antiseptic precautions. The general rules already mentioned for managing most cases of normal and abnormal puerperal hemorrhage, either antepartum or postpartum, must sometimes be seconded by further measures of an operative character.

In all cases of abortion it is imperative that the uterus be emptied by careful curettage, if Nature does not fully accomplish that object within a comparatively short time. No woman with retained placenta is secure from hemorrhage which may be exhausting and, if attended with sepsis, dangerous to life.

Puerperal hemorrhage incited by neoplasms, whether benign or malignant, often opens up a question of expediency which may be solved by resort to simple methods of hemostasis, or lead to major surgical procedures like Cesarian section, hysterectomy, or the Porro operation.

Lacerations of the cervix and perineum must sooner or later be repaired surgically, and if operation be indicated at the time of their occurrence the medical man in attendance should be the one to perform it. Inversion must be followed by immediate reduction, or the case will soon become one for capital operation.

Rupture of the uterus and pelvic hematoma are often appalling in their sequelæ, even with the best medical and surgical attention promptly rendered. Placenta prævia from the first instant of discovery is a merciless warning to the stoutest heart that dire results will surely follow if the right thing is not done at the right time. The earlier and more certain the diagnosis of placenta prævia is made, the more secure is the life of both mother and child. If the accoucheur has thoughtfulness to examine the patient in the early months of pregnancy and at frequent intervals thereafter, and possesses the tactile dexterity of touch to diagnose placental displacement toward or at the internal os before dilatation or hemorrhage appears; or if he can diagnose the trouble in the incipient stage of hemorrhage, when there is but slight dilatation of the cervix, a great point is gained and he may elect the treatment most promising to the safety of mother and child.

If his first knowledge of the trouble comes to him after the seventh month of gestation, with a dilated os and a torrent of blood, there is little time for deliberation or election of method. The practice in vogue for centuries of temporary tamponage, followed soon after by instrumental or manual delivery, preferably accouchement forcé and podalic version, is the routine method of procedure. The life of the child is sacrificed and if the mother lives it is deemed commendable practice. With the exception of the introduction of asepsis and antisepsis in obstetrical practice there has been comparatively no advance in the treatment of placenta prævia for a long time past. Within the last few years, during which some clear-headed and accomplished surgeons have made a bold stand for resort to Cesarian section in selected cases of

placenta prævia, with favorable environment for the performance of the operation.

Statistics and opinions on record for or against Cesarean section in placenta prævia are so scattered and lacking in conclusiveness to the satisfaction of the profession at large that I shall not attempt to reproduce them here.

Why should there not be advance in the line of saving babies as well as in other branches of medicine and surgery? Cesarean section and symphysiotomy in cases of deformed pelvis are fast improving the records of babies unsacrificed and mothers humanely treated and saved. Why may not the same be true of placenta prævia? If Cesarean section can be done as safely for the mother as podalic version, and if to this can be added the reasonable assurance of saving the life of the child, which is almost invariably sacrificed in podalic version, why should it not be done?

In the *New York Medical Journal* for November 3, 1900, is published a really classical paper by that brilliant surgeon and teacher, Dr. A. Palmer Dudley of New York, entitled "Ideal Method of Treatment of Placenta Prævia." It is a most satisfactory presentation of the subject in favor of this surgical innovation. The following, quoted by Dr. Dudley from Dr. Reynolds, states the case clearly: "When the mother is in good condition, uninfected, not exhausted by long labor, or by prolonged efforts at instrumental delivery, Cesarean section is so safe an operation that it may be resorted to unhesitatingly." That the writer may not be accused of having read or studied but one side of this topic, he begs to say that he has searched a large number of journals and some of the most recent text-books for points and evidence both *pro* and *con*; for fairness he would refer to a paper by Dr. Ehrenfest on "The Impropriety of Cesarean Section in Placenta Prævia," published in *American Medicine* of January 11, 1902. The latter summarizes his paper by flatly repudiating the statistics he quotes in saying, "The results of Cesarean section at large are worse than is usually stated," and then gives much emphasis to what he terms his method, which he teaches and which we all know is almost as old as the oldest medical literature and teaching, and has been found wanting for many, many years when real saving of the lives of mothers and children has been the object sought.

HOW SHALL WE TREAT SEPSIS FOLLOWING ABORTION OR LABOR?

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EVERY physician of any considerable experience has seen numerous cases of the above types of greater or less gravity, and no doubt all have some method of treatment. The very common occurrence of these infections and their too frequent fatal results lead me to think that many times proper treatment in the early part of the

cases has been neglected, and often death follows when it might easily be averted.

Of course, we all now understand the great importance of surgical cleanliness in the early history of these cases, and that prevention, when possible, is better than cure. And I hardly need to urge before this body of intelligent physicians the duty of asepsis as a preventive measure. I shall not speak of the diagnosis further than to remind you that not all cases of fever following labor or abortion are due to infection along the genital tract, but such patients *may*, rarely, have fever from other causes, and these should not be overlooked. Neither is it necessary to speak now of the different varieties of infection, for while I fully indorse bacteriological examinations and heartily commend the work of those making investigations along this line in hospitals and under suitable conditions, it is a fact that the large majority of these cases to-day must be treated without these facilities and that promptly. Delay in many cases is exceedingly dangerous and would mean death if prompt and efficient treatment were withheld pending a bacteriological examination, even if the most approved facilities were at hand for carrying it out. Hence, I would say that if a safe, easy and reliable method of treatment can be found, we should all be prepared with it and use it as soon as demanded. Thus we will get the best results and save the most lives.

The uterus, the broad ligaments and the vagina are abundantly supplied with lymphatics, the circulation is most free, the rectum and sigmoid with their poisonous contents are in close proximity and the peritoneum is a most active absorbent, so that all of these poisons, of whatever variety, may when present be quickly passed into the lymphatics, the circulation and the peritoneum, producing results more or less speedily fatal, depending upon the variety and amount of infection; its point of contact and its dissemination, together with the degree of local and individual resistance to the infection.

It matters not whether we have a sapremia, which is "a febrile condition due to the introduction into the blood of the chemical products of putrefaction;" or a toxemia, "a condition of contamination or poisoning of the blood;" or a septicemia, "an infective disease caused by the absorption of the septic products;" or a pyemia, "which is septicemia, with the formation of secondary or embolic abscesses." We always have in sepsis following labor or abortion pathogenic micro-organisms or their products, the ptomains circulating in the blood and giving rise to the untoward symptoms; and, further, the absorption of these bacteria or their poisonous products always takes place from some portion of the genital tract which has been recently and specially denuded so that its absorbents may easily receive the poison.

For, while Von Eiselberg has demonstrated both streptococci and staphylococci in the blood of septic patients, Rosenbach has shown that bacterial invasion of the blood is not at all essential

to sepsis and concludes rather that septic symptoms are due instead to the absorption of poisonous ferments and ptomains. It has been wisely said that those who believe in the germ theory of pathology believe that "zymotic diseases are due to the presence in the body of living organisms . . . and produce their morbid effects by their vital activity, and probably in large part by the formation of poisons called ptomains." A recent writer in a carefully-prepared article says, "The presence of a foul odor in the discharge would justify the careful use of the curette. A culture should then be made of the discharge and the cavity thoroughly injected with hot sterile water or salt solution. In the absence of foul discharge the curettage should be omitted, but the culture should be taken and the preliminary injection employed. After twenty-four hours the culture growth will demonstrate the nature of the infection. If other than saprophytic, the curette must not be used. Streptococci are the most common and serious germs encountered in puerperal infection, but the same rule regarding the curette applies to others, such as the staphylococcus, gonococcus, colon bacillus, etc." I make this full quotation to condemn it for two special reasons. First, it is visionary and impractical at the present day in most cases. Second, if acted upon it would allow many women to die who might otherwise be cured by prompt and energetic treatment.

It should not be forgotten that whether the infection be by streptococcus, the staphylococcus, the colon bacillus, the gonococcus or saprophyte, death may result. True, some will produce that termination much more certainly and speedily than others; but since an immediate determination cannot be made as to what the outcome of the case will be if one temporizes, both scientific and humanitarian principles demand that prompt and as heroic treatment as safety will permit be at once instituted.

Lantas' article upon the treatment of abortion, approvingly cited in Gould's Year-Book, was a citation of 300 cases treated, of which twelve had fever and other evidences of sepsis. One case ended fatally. The treatment in all was to empty the uterus and cleanse with bichloride. In conclusion he says: "In all cases of septic infection complicating abortion, when either the whole or a part of the ovum is retained the uterus should be emptied as soon as possible and cleansed with bichloride solution. When septic infection persists after abortion, the total removal of the uterus, tubes and ovaries is indicated."

Vineberg says: "In every case of puerperal sepsis a thorough search for the original site of the infection, whether it be a wound of the perineum, vagina, or cervix, should be made, and, if found, it should be treated by surgical measures. . . . If by exclusion or otherwise, it is decided that the site is within the uterus, it should be subjected to a thorough curetting with the finger or preferably with the sharp curette." He claims that by this method of drainage and intra-uterine irrigation 95 per cent. of the more serious

types of puerperal sepsis will recover and that of the other 5 per cent. some will require opening the abdomen and most will require abdominal hysterectomy. To this view I cannot assent, but hold that rarely, if ever, in these acute cases are we justified in doing an abdominal section. Vaginal section is often indicated and vaginal hysterectomy may be required, but abdominal hysterectomy almost never.

Goffe says: "The question or even the propriety of hysterectomy for puerperal sepsis has yet to be determined, as there is no affection in which it is more difficult to lay down general principles of action." True, we are not always able to make a diagnosis in such cases, but it must be clear to every medical man that a uterus the walls of which are filled with abscesses or infiltrated with pathogenic germs, through and through, and in which the tubes, ovaries, and broad ligaments are badly involved, should be entirely removed as early and as completely as possible. By this treatment alone can any of these patients be cured and more will get well after the vaginal operation than after any other.

Given, then, a true case of sepsis, see that the bowels are emptied, the vulva cleansed, the vagina and uterus thoroughly emptied and cleansed of all infective material, and all pathogenic germs within reach removed or destroyed, and your patient will get well provided only that the system is able to cope with the germs and poison already in the circulation.

Now, how shall this be accomplished? By means of calomel and salts to open the bowels, an abundance of soap and hot water to cleanse the vulva, the finger, sharp curette, abundance of hot water and pure carbolic acid to sterilize the vagina and get rid of all infective material and pathogenic germs within reach. All remnants of placenta, infected blood-clots and sloughing tissue, whether in the uterus or in the wounded cervix or vagina, should be gently but thoroughly removed and these raw surfaces wherever found freely swabbed with pure carbolic acid, even covering the whole inside of the uterus with the pure acid if symptoms at all serious are present.

No packs or dressings should be allowed in either the uterus or the vagina, but free drainage should be secured. I am well aware that many object to the use of the sharp curette, and think it better generally to use nothing but the finger. A well-known writer says: "In the great majority of cases it is wiser thoroughly to curette the uterus, with the object of removing the whole of the decidua and retained products. There is no evidence that curetting, if done with every precaution, favors the spread of infection. In very virulent infection, early curetting, with the object of sterilizing the uterine cavity, affords the best chance of a successful result." I can heartily indorse these sentiments if you add the pure carbolic acid as a means of helping to secure complete sterilization of the uterine cavity. I am familiar with the fact that Bumm, the German pathologist, holds that under favorable conditions

an inflammatory exudate is thrown out around the seat of invasion, which, aided by phagocytic action of the white corpuscles, prevents penetration of bacteria to adjacent tissue and the process is thus limited to a circumscribed area. Therefore Goffe and others teach that only in saprophytic infection should the curette be used, lest we break down Nature's wall of protection and open up these channels to more serious infection. But all admit that many times the bacteria break through this protecting wall and play havoc with the system. This fact must be patent to every physician. Else why give any treatment? Why do serious infections steadily and progressively grow worse? If Nature's barriers are sufficient to head off these most serious and virulent infections, why do patients thus afflicted persist in dying? And why is it that proper local treatment, even when it destroys these barriers, succeeds in saving lives and rescuing patients from the grave?

If you will but consider a moment the structure we are dealing with and remember that, in addition to blood-clots and remnants of infected placenta, we have, if the uterine cavity be infected by any pathogenic germs, a sloughing and infected lymphoid tissue which normally comes away in the lochia and which now remains a most favorable nidus for the multiplication of these pathogenic organisms, and this bed of poison cannot be adequately removed by the finger nor yet by the dull curette, you will readily perceive why it requires the proper use of the sharp curette. This with the sterilized douche carries away mechanically the most of the unhealthy micro-organisms and their nidus. Having done this and in a like manner treated all other raw surfaces in the cervix, vagina and perineum, take a swab of cotton dipped in pure carbolic acid and apply freely to all of these raw surfaces, and you at once seal up all absorbents and destroy all remaining germs. This is heroic treatment, but if well done is absolutely safe and certain to stop further infection along any of these channels. Some object to the use of the pure acid, fearing either poisoning by it or too deep caustic effect, but if your wound surface is comparatively dry, so that the acid is not too much diluted by the secretions and blood or water, you get a superficial caustic effect and an albuminate is formed, sealing over the absorbents so that none of the acid passes into the circulation and no toxic effect can occur. Otherwise, the caustic effect is so superficial that no permanent damage can be done to the tissues, for no deep slough and no cicatrization or other serious changes take place in the deep structures. All of this is not mere theory, but actual fact which any one may observe in practice if he will take the pains to notice.

It seems strange that men who oppose the sharp curette in the graver forms of infection because, they say, you break down Nature's barriers and open up the parts to worse infection, and because, they say, paradoxical as it may seem, the infection has already entered the sys-

tem and is beyond the reach of your curette or of your local antiseptics, should yet advise removal of uterus, tubes and ovaries, etc., by the vaginal or abdominal method. Why do all this and greatly increase the shock to your patient and render her less able to cope with the pathogenic germs already in the system? Such men will be compelled to answer that it is done with the idea of removing those parts which contain the point of invasion, together with the prolific bed of these organisms, the pathogenic germs and their ptomains, hoping thereby to remove mechanically so large a part of them that Nature, aided by the physician's internal medicines, may overcome those germs and their products which have already passed beyond the reach of his knife. I hold that this is their reasoning and it is sound. If sound and logical as well as scientific, why will not the same principles hold when I urge that, at a still earlier period in the case, before the infection is so deep or widespread, all of these raw surfaces, including the inside of the uterus, be curetted thoroughly with the sharp curette, all of the superficial surface, which is the point necessarily first infected, being removed, then all debris washed away with sterile water, and the germs and their pabulum with their ptomains carried away by flushing? Then, because there will still be left some bacteria, which it is well known cannot be carried away, pure carbolic acid should be freely used to destroy those that remain and quickly to seal up all absorbents against further invasion.

It is not claimed that the curette gets rid of all pathogenic germs; it carries away multitudes of them and the superficial structures which are already so full of them and their ptomains that Nature cannot get rid of them, and we should give her prompt assistance by removing all of that tissue which she can readily spare and which is now a source of constant and increasing infection. Neither is it claimed that the application of pure carbolic acid (95 per cent.) will follow these pathogenic germs into the circulation and destroy them there; but it is claimed that it destroys all within its reach, and those in a superficial layer still left by the curette. What I insist upon is that this treatment, employed early, is not only justifiable and safe, but is curative and will avert the necessity for a hysterectomy later. Let this become the prompt and universal early treatment and these patients will generally recover, no matter what the variety of the infection.

To summarize the treatment let me say:

1. Remove early with the finger, sharp curette and flushing all debris, decidua, blood-clots and sloughing tissue which may be infected, from the uterus and from all raw surfaces of cervix, vagina, and vulva.

2. Dry all of these raw surfaces and freely apply to them the 95 per cent. carbolic acid, washing away the surplus with sterile water.

3. Unless hemorrhage require, leave no tubes or packing of any kind in either vagina or uterus.

4. Have a simple carbolized, 2 per cent., vaginal douche used twice a day.

5. Open the bowels freely with calomel, $\frac{1}{2}$ grain, every hour for four hours, to be followed by Rochelle salts until sufficient action has occurred.

6. Give quinine, 3 grains, every four hours, followed by tincture of the chloride of iron, 15 drops, in water.

7. Give good nourishment, with milk, eggs and stimulants every four hours.

8. Let this be the routine *early treatment*.

9. When fixation of the uterus occurs and infiltration takes place in Douglas' cul-de-sac or in the broad ligaments, or when the tubes or ovaries fill with pus in acute cases, open promptly and drain through the vagina.

10. If multiple abscesses occur in the uterine walls, if the walls become badly infected, or if necessary in order to secure perfect drainage for a badly-infected pelvic cavity, remove the uterus and all else necessary by the vaginal route.

THE ETIOLOGY OF PUERPERAL TOXEMIA.*

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FROM the earliest days of historic medicine, the majority of writers have felt that puerperal fever was primarily due to something in the blood. In 1762 Plenciz announced his belief in the doctrine of a special "seminum" for every disease. To Pasteur must be accorded the honor of being the first to prove that by the exclusion of micro-organisms from the human body infectious diseases can be prevented.

Synonyms.—Puerperal fever, childbed fever, milk fever, puerperal infection, etc.

Definition.—Puerperal toxemia arises when a specific pyogenic micro-organism, having gained admission to the body and having found the conditions favorable, grows and multiplies and in so doing elaborates a chemical poison which induces its characteristic effects. Thus, from an etiologic standpoint, we have for consideration (1) the seed, (2) the soil, (3) the sower, and (4) the harvest.

The Seed, Micro-Organisms.—By micro-organisms are meant minute living beings, some of which have the characteristics of animal life, others have those of the vegetable kingdom, and still others possess those of both, classified by Haeckel as protista. These organisms include the lower fungi, molds, yeast, bacteria and protozoa. Bacteria, for our present study, may be arranged as follows: (1) Saprophytes, refuse-eaters, harmless, useful, causing fermentation and putrefaction, thrive outside the living body. (2) Parasites, thrive within the living body as strict or obligatory *in toto* or capable of a dual life within or without the body. The basic forms multiply

by division or fission, like producing like, as the sphere, coccus, rod, bacillus and spiral, spirillum. The characteristic arrangement is mono-, single cells or groups; diplo-, dividing in one plane, grouped in two halves; tetra-, dividing in two planes, grouped in fours; sarcina-, dividing in three planes, grouped in sets of eight; strepto-, adhering together forming chains; and staphylo-, adhering together forming grape-like bunches. They are also pathogenic or disease producing, pyogenic or pus producing, and toxicogenic or toxin producing.

Of all the bacteria capable of producing in the human body disease, pus, and toxins, the most common are the streptococcus pyogenes, staphylococcus pyogenes, gonococcus Neisseri and bacillus coli communis.

The Soil, the Genital Tract.—The conditions predisposing to infection are the postpartum conditions, which present every essential for the reception, rapid multiplication and absorption of bacteria and their products. These may be grouped as (a) traumatic abrasions, lacerations, denuded uterine surface with dead spaces, pressure points, relaxed structures resulting from the recently completed labor; these providing (b) the necessary chemical conditions, moisture, salts, and temperature, with coincident (c) physiologic hypertrophy of the lymphatic and venous system, and (d) exhaustion from muscular efforts, exposure and loss of blood; affording a soil thoroughly plowed, harrowed and watered for the reception of the seed, if, unfortunately, the sower appear.*

The Sower, Modes of Implanting Infection.—The carefully-conducted investigations of Thorn of the bacteriologic contents of pregnant women who have not been examined before labor, have shown that it is not right to conclude that the vagina and cervix of healthy women always contain bacteria which can at a moment's notice produce independently an active puerperal septicemia. Normally the cavity of the uterus contains no bacteria after childbirth, while the vagina and cervix harbor numerous saprophytic parasites that cannot spontaneously assume a toxic property. Rarely the vagina and cervix contain also pathogenic bacteria, the explanation of the presence of which is not easy; but this presence must be considered to be abnormal, and an explanation must be sought if one be not at hand. Bacteria occurring in the vagina under normal conditions are for the most part saprophytic, and also such as occur may upon favorable nutrient media produce toxic ptomains; or pathogenic bacteria occur in the vagina and cervix which are found to be of attenuated virulence; but it is also unquestionable that such bacteria may, under the conditions of childbirth, find a favorable medium for their development. But infectious and pathogenic

*"What can be more striking than the experiments of Phisalix," who shows that the very component cells of the body are as able and as apt to manufacture pathogenic toxins as the bacteria themselves? And Charrin (Poisons de l'Organisme, Paris, 1890) evidently believes that the main factor in contracting a disease of bacterial origin is the soil and that the agency which is most likely to create a favorable soil is that of auto-intoxication." (Med. Rev. of Rev., May 25, 1899, page 340.)

*Read before the Section on Obstetrics and Gynecology, New York Academy of Medicine, 1901.

bacteria find their way into the genital canal of healthy women only under abnormal conditions, and are undoubtedly brought there from other sources. "Of the twenty-nine examinations made by Steffek, the staphylococcus pyogenes albus was found nine times, the staphylococcus pyogenes aureus three times and the streptococcus pyogenes once."

The most common means of implanting pathogenic bacteria within the genital tract is by oft-repeated, antepartum, digital examinations, with hands which have not been rendered surgically clean, or by failure to wear sterile rubber gloves whenever there is any doubt as to one's ability to remove all traces of contact with doubtful cases—the one all-important duty of every accoucheur before, during and after labor. Next in order stands the use of unsterilized instruments, sutures, catheters, douche-nozzles or anything which may be introduced or brought in contact with the external or internal genitals. Failure to remove all hair from the vulva and to scrub thoroughly that region before applying forceps or inserting the hands or instruments prior to obstetric surgery, must compel the obstetrician to hold himself guilty if infection supervene. Many nurses when intrusted with catheterization and the administration of douches fail to cleanse thoroughly the vulva and separate widely the labia before inserting the nozzle, thus conveying bacteria within the vagina. Some nurses and midwives are also guilty of uncalled for inquisitiveness which they gratify by frequent digital examinations.

Stroganoff² is of the opinion that antepartum baths, as usually administered, are an element of danger, in that the water entering the vagina carries with it not only organisms from the skin of the patient herself, but also those adherent to the bathtub. In his own hospital he has substituted the application of soap lotion under a constant stream of water. Since the introduction of this method the mortality from sepsis has considerably diminished.

Sticher³ has also been investigating this subject and has proved both by chemical and bacteriologic methods that water can enter the vagina as a result of a bath ordinarily administered. He says: "I put into the water of a bath an organism not met with in the vaginal secretion, the *bacillus prodigiosus*, and succeeded both in primiparæ and in multiparæ in proving the presence of this organism in the vaginal secretion when the patients had left the bath."

The Harvest, Puerperal Toxemia.—Having studied the exciting cause, the manner of implantation within the human body, and its habitat, we naturally turn to the consideration of the question, How do bacteria induce disease? According to Vaughn the phenomena which we designate infectious disease can be accounted for only on the so-called chemical theory of the action of bacteria and admits of several possibilities.

1. The bacterium may elaborate a soluble chemical ferment, which by its action on the animal

body causes the symptoms of the disease and induces death. That many bacteria do produce soluble chemical ferments, some of which closely resemble specific toxins, has been demonstrated.

2. "The germ may, either by its direct action as a living ferment or indirectly through a soluble chemical ferment secreted by itself, split up some of the complex proteid constituents of the organism into simpler bodies, among which there may be poisonous substances. The action, according to this theory, would be similar to that by which the yeast-plant splits up the sugar molecules into carbonic acid gas and alcohol. . . . This theory of the cleavage action of the bacteria does not necessitate the supposition that the poisonous substances have been an integral part of the bacterial cells. It assumes that the bacteria have an analytical action upon the constituents of the animal tissues, splitting up complex bodies into those of simpler structure."⁴

3. "The bacteria may convert their food into poisonous substances. This conversion of inert into poisonous material may occur during the process of assimilation, i.e., the content of the bacterial cell may be the active agent, or the conversion may occur during the process of elimination from the bacterial cell. That some of the pathogenic bacteria act synthetically or constructively in the elaboration of their specific poisons has been demonstrated."

1. *Bacterial Poisons, Ptomaines.*—"A ptomain may be defined as an organic chemical compound, basic in character and formed by the action of bacteria on nitrogenous matter. On account of their basic properties, in which they resemble vegetable alkaloids, ptomaines may be called putrefactive or bacterial alkaloids. . . . The kind of ptomain formed depends upon the germ producing it, the material on which it grows, and the conditions under which it grows, such as temperature, the amount of oxygen present, and the stage of the growth reached."

"Poisonous action is not an essential property of ptomaines. It is only necessary that the substance should be of bacterial origin and should be basic in its behavior toward acid in order to be classed in this group. Indeed, many of the ptomaines so far isolated are not, when administered in single doses at least, poisonous. Recent researches have demonstrated that the ptomain must be relegated to the less important bodies concerned in the production of the symptoms of disease."

2. *Bacterial Toxins.*—All pathogenic bacteria that are harmful to man are toxicogenic; that is, they produce specific bacterial poisons now generally known as toxins. The investigations of Uchinsky demonstrate that the germ constructs its toxin, synthetically, out of bodies of less complex structure.

Bacteria produce toxins and set them free under widely different circumstances. In some there is found a poison adhering to their bodies, probably forming an integral part of their structure, only set free when the organism disintegrates. In the

animal body they seem to find especially favorable conditions for their solution (Pfeiffer). Each cell contains in its interior a specific toxin, not destroyed by heat, dead bacteria retaining strongly toxic properties.

3. *Infectious Fever*.—Centanni isolated from saprophytic and pathogenic bacteria the pyrogenous agent, pyrotoxin, to which, in his opinion, the fever of infectious disease is due.⁸

Centanni, in particular, has given especial attention to infectious fever, and sums up his work as follows: "(a) The production of bacterial fevers is carried on by a general intoxication with a poison (pyrotoxina bacterica) which has its origin in the interior of the bacterial cells themselves and differs in its properties from the as yet better known bacterial poisons (ptomaines, enzymes, toxalbumins). (b) This poison is widely distributed and common to all bacteria, so that it is found in non-pathogenic as well as in the pathogenic varieties, and always with the same proportions."

Puerperal Endometritis.—"Endometritis is the result of infection with pathogenic micro-organisms which are carried into the puerperal uterus during the puerperal state."⁹ Doderlein says: "The hitherto general belief that inflammations of the uterus are divided into metritis and endometritis can no longer be considered correct, since it has always been shown that the uterus is always diseased *in toto*."⁹

"The pyogenic form is most common in the puerperæ. The streptococcus pyogenes is nearly always the active agent, though staphylococci, gonococci, and the bacterium coli commune may be the etiologic factors."¹⁰ This statement has been amply confirmed by Kroenig's study of 179 cases of puerperal endometritis which he places in three groups: (a) Pyogenic form, due to streptococcus pyogenes, seventy-four cases; due to staphylococcus pyogenes aureus, four cases. (b) Gonorrheal form, fifty cases. (c) Putrid form, due to saprophytic bacteria, fifty cases. The important point arrived at from this series is that in all of the six fatal cases infection was due to the streptococci. In some of the cases the infection appeared to be of the mixed form."¹¹

Menge and Kroenig¹² found that there are several varieties of streptococci, resembling one another in size, shape and facility in staining, but which in culture, growth, and resisting power to the oxygen of the atmosphere show marked differences. Some are of the first class and highly virulent; others are sometimes found as saprophytes in the vaginal secretion. Both varieties have been found in the connective tissue of the human body in purulent parametritis and in the local secretion from the uterus.

Conditions Inimical to Infection.

The study of the life history of bacteria within the human genital tracts leads one to recognize that there are many things to contend with.

1. *Vaginal Bacillus*.—Doderlein isolated from the vaginal secretion of pregnant women a special

organism which he claims is the chief defender of the genital tract against bacterial invasion, exerting a powerful germicidal action on pathogenic organisms; he attributes the liability to puerperal infection as due to their being washed away by the liquor amnii; and Menge has shown that with the exception of the gonococcus, bacteria cannot remain for any length of time in the genital tract. Williams¹³ twice found the staphylococcus albus and occasionally the gonococcus in the vaginal secretion from ninety-two pregnant women.

2. *Symbiosis and Enantiobiosis*.—Among all bacteria there are those which assist or oppose one another mutually or one-sidedly. Some thrive best and most virulently when associated with another species; attenuated bacteria regain their former virulence when associated with certain saprophytes, the one producing conditions or materials which favor or oppose the development of the other.

3. *Oxygen*.—The relation of bacteria to oxygen is very important, and leads Liborius to distinguish three classes: (a) Obligatory anaerobes, growing only when oxygen is completely excluded. (b) Obligatory aerobes, which grow only when oxygen is freely supplied. (c) Facultative anaerobes, which thrive best in the presence of free air, but nevertheless are capable of growing, although more slowly, in its complete absence; this capacity is, however, very variable. The greater number of pathogenic forms are found in this class.

4. *Temperature*.—Bacteria adapt themselves to the temperature of their surroundings and exhibit the three cardinal points, minimum, optimum, and maximum, common to all living organisms. Pathogenic forms require temperatures approaching that of warm-blooded animals to promote an abundant growth. At the minimal temperatures, at which growth is slight, the metabolism is much depressed, while at the maximum temperatures inhibitory effects are noticed, only slowly recovered from after a return to optimal temperatures. MacFeyden and Roland¹⁴ exposed bacteria for seven days in hermetically sealed tubes of liquid air, at 190° C.; there was no alteration in structure and no change in their virulence except that they grew a trifle more slowly.

5. *The Size of the Dose*.—Cheyne, the first to call attention to the importance of the size of the dose, demonstrated that "a pure culture of pyogenic bacillus, injected subcutaneously in a rabbit in a dose of $\frac{1}{10}$ c.c. produced death in from twenty-four to thirty-six hours; the blood and organs contained very few bacilli. It is therefore probable that in animals rapid death following injections of large amounts of this bacterium (proteus vulgaris) is due to the absorption of some toxic material secreted by it. If smaller doses ($\frac{1}{100}$ c.c.) be used, the result is an abscess of slow formation to which the animal succumbs generally at the end of from six to eight weeks; in still smaller doses, the abscess is still more slow, and the animal ultimately recovers; finally, no effect

whatever is produced by the use of extremely small doses."¹⁵

6. *Salutary Fever and Leucocytosis.*—Discussing the effects of fever, Ernst¹⁶ says that of all the symptoms of acute infectious diseases, fever is the most constant, yet we are almost wholly ignorant of its mode of production and of its influence upon the course of these diseases. At the present time the immediate practical importance of this question is very great, since so large a part of the treatment of these diseases consists in combating the fever which is so constantly present. The fallacy of such treatment is apparent in view of the conclusions of Loewy and Richter that fever and leucocytosis should be regarded as of assistance to the body in combating the effects of infection, and they suggest that therapeutic benefit may be derived from the use of means tending to increase these conditions instead of from those antagonizing them.

Blumreich and Jacoby¹⁷ personally extirpated the spleen from 200 guinea-pigs and noted immediately thereafter considerable leucocytosis, leading to an increased bactericidal action of the blood and to an increased resistance against infection; the spleenless guinea-pigs lived much longer than the other animals which had been inoculated with the same toxins.

7. *Phagocytosis.*—Phagocytosis is the swallowing or incorporating of foreign particles by certain of the leucocytes, capable of ameboid movement, which are called phagocytes. The attraction which draws the animal cell to the vegetable cell is called chemotaxis. "Phagocytosis is almost universal in the micro-organismal diseases at some stage or other. At the edge of an erysipelatous patch a most active warfare is being waged between the streptococci and the cells. Near the center of the patch there are many free streptococci and a few cells; nearer the margin there are free streptococci and also a great many streptococci enclosed in cells (leucocytes) which are for the most part dead. Farther out we find a host of active living cells engaged in eating up their enemies as fast as they can. The phagocytosis proves that at the center the bacteria are fortified, actively growing and virulent. In the next zone the leucocytes (phagocytes) that have feasted upon the bacteria are poisoned by them. Outside, the cells which are more powerful and which are constantly being reinforced are waging successful warfare against the streptococci. In this manner the battle continues.

The organisms which are seized upon by the leucocytes do not remain in the blood, but are collected in the spleen and lymphatic glands; and not the least important fact in favor of phagocytosis is that observed by Bardach, that excision of the spleen diminishes (secondarily) the resistance to infectious diseases.

"When the dose of toxin produced overpasses a certain limit the phagocytes draw off and leave the field free to the microbe for its multiplication."¹⁸

8. *Bacteriic Antitoxins.*—"A characteristic of

all toxins is the capacity to induce the formation of antitoxins, according to Behring's law, which holds that the introduction of such toxins in suitable doses is followed by the evolution of their specific antitoxin; and, further, that by repeated and continued inoculations this active immunity can be brought to a high degree of perfection."¹⁹

9. *Immunity.*—Among the properties of the blood serum and other animal fluids is a well-marked bactericidal action which plays an important part in the acquirement of immunity. According to the work of Behring, Kitasato and others, immunity is due to the presence of albuminoid substances, to which Hankin has applied the name *defensive proteids*, having the power of killing pathogenic bacteria, of attenuating them, and of destroying their toxic products. The recognition of these facts leads Hericourt and Reichert to attempt artificial immunity and has resulted in what is now known as *serum therapy*, with all its vast results and possibilities.

10. *Endothelial Destruction.*—Wyssokowitch found that saprophytic micro-organisms collect in the small capillaries where the blood-stream is slow, and where they are taken up by the endothelial cells. Wyssokowitch found them most numerous in the liver, spleen and bone-marrow, and found that in these situations they destroyed the saprophytic organisms in a few hours, and the pathogenic in from twenty-four to forty-eight hours.

Conclusions.

Puerperal toxemia is due to the implantation of pyogenic bacteria within the genital tract before, during or after labor, in which they find a well-tilled soil, of the right temperature, moistened with the necessary saline fluid, upon which they thrive and, multiplying, living or dead produce chemical substances (toxins) which, when absorbed into the system, induce the condition known as toxemia and give rise to the symptom-complex designated sapremia and septicemia.

The introduction of micro-organisms is in the larger proportion of cases (barring gonococcic cases) an avoidable offence.

Unfortunately, infection from external sources is not rare; therefore it is the imperative duty of nurse, student, and physician, when in charge of a pregnant or puerperal woman to conscientiously practise asepsis.

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MEDICAL PROGRESS.

OBSTETRICS AND GYNECOLOGY.

Auto-intoxication in Pregnancy.—The relation between uremia and eclampsia has long been recognized, but of later years the theory has been advanced that many other disturbances occurring in pregnancy are due to auto-intoxication. A. BARONE (*Archiv. d. Ostet. e Gin.*, Year IX., No. 2, 1902) discusses this question under the following heads: (1) Does normal pregnancy cause a superproduction of toxins or special toxins? and (2) What is the condition of the defensive organs in pregnancy? He maintains that during gestation there is stagnation of alimentary substances and that the liver, under the unusual conditions, does not functionate adequately; consequently putrefaction of alimentary albumins occurs, with an outpouring of their toxic products into the circulation. Pinard is quoted as stating that the absence of menstruation constitutes a retention of organic secretion which necessitates an absolute integrity of the other secretions and functions; the author holding that suppression of the menses plays an important part in the toxemia of pregnancy. The fourth potent cause of toxemia is considered to be the blood; its decreased oxygen-bearing power leading to incomplete combustion of decomposition products. Upon the liver and kidneys especially falls the burden of counteracting this hypertoxic condition, the rôle of the former being neutralization of toxic products; of the latter elimination of non-neutralized toxic substances; but too often their functions are impaired by the noxious effect of the blood upon their parenchyma through decreased nutrition, and through modifications in the endo-abdominal circulation; a condition of hepato-intoxication resulting, and giving rise to headache, somnolence, general pruritus, uncontrollable vomiting, etc., or evidence of kidney disease showing itself.

Primary Fetal Variola.—A question which from its gravity has long attracted the attention of students and which cannot as yet be regarded as solved, is that of the influence of variola upon pregnancy. The most frequent result of the disease in the pregnant woman seems to be abortion or premature delivery; in a certain proportion of cases the fetus showing evidence of infection, in other instances absence of variolous marking. In an extremely limited number of cases, variola has developed in the fetus, the mother showing absolutely no evidence of the disease. G. JACONTINI (*La Riforma Medica*, Mch. 14 and 15, 1902) contributes to the literature of this subject a paper dealing with such a case observed in his personal practice. The child was stillborn at term, the entire body being covered with variolous eruption in the pustular stage. Although the mother had been exposed to the disease there was no manifestation of contagion in her person before or after parturition and pregnancy followed a perfectly normal course. The author feels that this case justifies the belief that a condition of relative immunity to a given infection may exist in a woman while the less resistant organism of the fetus may succumb to the influence of noxious substances circulating in the maternal blood.

Ventrofixation and Subsequent Pregnancy.—Cases of unfortunate complications arising from pregnancy following ventral fixation lead J. C. CAMERON and F. A. L. LOCKHART (*Jour. of Obstet. and Gyn. of the Brit. Empire*, Mch., 1902) to report the course of a labor in such a condition. The uterus was bound firmly to the abdominal wall and was thereby prevented from driving the head downward into the pelvic cavity. As the anterior wall could not contract so freely as the

posterior wall of the uterus the pressure was downward and forward, forcing the head against the pubes. The anterior parietal bone was arrested, and the posterior parietal glided into the pelvic cavity. This constituted an exaggerated and persistent Litzmann obliquity. After the most violent uterine action had failed to accomplish anything, a single backward pull was made with the forceps and the head at once slipped into the pelvic cavity. In a similar case the authors think that it would be wiser to induce labor at the end of the eighth month, when the head would be smaller, softer, and more easily molded.

Puerperal Insanity.—Those who have studied the reproductive life of women admit that gestation is attended by much nervous disturbances in many, and some nervous disturbance in all; the intimate sympathetic connection of the mammae with the gravid uterus gives rise in normal persons to various forms of neuralgia, headache, etc., whereas in highly susceptible persons these changes of disposition and character become so marked that irritability, fractiousness, and despondency may and do amount to actual insanity, writes ROBERT JONES (*Brit. Med. Jour.*, Mch. 8 and 15, 1902). From the author's statistics, gathered in the London County Asylum, Claybury, it would seem that the pregnant condition renders woman less liable to insanity than during any other period of her life. In this institution the number of cases admitted would show that puerperal insanity develops in about one case in every seven hundred confinements. According to the English Lunacy Commission for 1900, the actual insanity including this variety, during the reproductive life, shows a percentage of admissions to institutions varying from 7.2 per cent. in the better classes to 8.41 per cent. in the poorer classes. The Annual Report of the Asylums of London for the same year shows 120 puerperal cases in 2,600 female patients admitted, which is less than 5 per cent., but a large number of this total were transfers of chronic cases from other asylums. During this year there were 132,652 births in London, which would give an approximate ratio of one case of puerperal insanity to every 1,100 births. The usual divisions of the disease in its classification is as follows: (1) Insanity which occurs during pregnancy; (2) that which occurs from the date of parturition to six weeks after confinement; (3) lactation insanity occurring six weeks after confinement. The author does not think there is a particular type associated with either pregnancy or lactation, but with parturition and the period immediately succeeding, the insanity presents such a marked delirium with wildness and delusions of a hallucinatory character, in which religious and erotic features become so prominent that one can recognize an almost distinct nosological entity. Twenty-five per cent. of 56 cases of primiparae exhibited puerperal insanity, and 78 per cent. of these were unmarried women. Insanity is more common when the child is of the male sex. In the puerperal cases, more suffered from mania than melancholia, and, again, more from the acute form of mania than the same of melancholia. Of 120 cases only one was epileptic. On the other hand, in the 83 lactation cases, a greater proportion suffered from the depressed than from the exalted variety of insanity. Gradual onset characterizes the advent of melancholia twice as often as mania and the gradual onset more often terminates in dementia. In melancholia cases, before admission to the institutions there is more of a tendency to wander away from home. Of 259 cases 129, or nearly 50 per cent., had some hereditary predisposition, either physically or mentally, and this included direct and collateral insanity, epilepsy, suicide, intemperance, phthisis, etc. The lactation variety occurs most often between the ages of thirty and thirty-four—

a fact which supports the view of exhaustion as an etiologic factor. The insanity of pregnancy and of the puerperium is oftenest met with between the ages of twenty-five and twenty-nine. Authorities consider this form of insanity the most recoverable. As to prognosis of the different types that occurring in early pregnancy is favorable; that occurring later is apt to continue in an exaggerated degree until after confinement and during the puerperal period and afterward become chronic; most of the puerperal cases get well rapidly. Insanity during lactation has a tendency to recover, but warning must be sounded against the risk of low forms of inflammatory diseases indicating a general want of recuperative power and a low state of nutritive tone. Albuminuria is not common, but when present gives a grave prognosis. Clouston stated that the insanity of pregnancy rarely passes off before confinement. The death-rate is highest in the insanity of pregnancy and lowest in the puerperal cases. Treatment has no direct effect upon the disordered mind. The treatment of disorders during this physiological period must depend upon whether the stage be (1) that of pregnancy, (2) that of childbirth, or (3) that of the puerperium. In general the pregnant woman should have a light dietary, gentle exercises, bright surroundings, attention to the bowels by mild saline aperients, and sleep by mild hypnotics, such as chloral and bromides in combination. In the puerperal form, the woman should be sent away from home. The wet pack is recommended for the mania. Alcoholic stimulants are absolutely necessary. Sleeplessness should be combated by chloral and bromides. Paraldehyde is satisfactory. The return of the menses may be looked upon as a forerunner of permanent mental improvement and means to encourage this should not be omitted.

EYE, EAR, NOSE, AND THROAT.

The Papilla in Orogenous Brain Disease.—Scientific examination of the background of the eye conducted by O. KORNER (*Deutsch. Arch. f. klin. Med.*, Vol. 73) shows that in intracranial suppuration following ear disease, neuritis or choked disk is rare, unless a combination of suppurative foci exist. From a prognostic point of view, changes in the papilla are of no value. As a rule there is a distinct retrogression of the inflammation several days after the pus has been evacuated. But even if it should persist or increase, the outlook is no less favorable.

Cauterization of the Cornea.—If the enucleation of the globe of the eye does not always impose itself in cases of hydrophthalmia, there are nevertheless pathological conditions causing increase in the volume of the eye which might be called congenital hydrophthalmia, and cases of staphyloma which necessitate other bloody interventions, such as iridectomy, with or without extraction of the crystalline lens, and amputations of the anterior segment of the ball. Since these amputations do not always give satisfactory results and sometimes expose the patient to sympathetic ophthalmia and always necessitate the use of a glass eye, DIANOUX (*La Sem. Méd.*, Mch. 19, 1902) conceived the idea of substituting for them a procedure void of all these inconveniences and more easily accepted by the general average of the diseases and the patients. It consists in brief of decreasing the volume of the eyeball by operating only upon the cornea with the sole means of a thermocautery. He makes at first a superficial cauterization with the instrument at dull red heat, tracing a star, the rays of which begin a little away from the edge and converge toward the center of the cornea, varying in number naturally according to the surface he desires to treat and usually leaving intervals about

1 millimeter wide in order to avoid necrosis. These primary cauterizations are followed by a second set which are placed over them, but extend more deeply through several layers of the cornea; then at the center a circle is traced about 2 millimeters in diameter and more if the dilatation be considerable; then if the point of the cautery increase suddenly to an active red heat this center is perforated and permits the aqueous humor to escape. The final step consists in powdering the cornea with bismuth and placing a pressure bandage over the eye, to be renewed after three days and thereafter morning and evening, after irrigation with boiled water and the instillation of a few drops of eserine and cocaine. In cases in which the volume of the eye is excessive three months after the operation, he repeats the procedure and insures, if necessary, the emptying of the anterior chamber continuously for several days by introducing an open stylet into the center. If the tension be still increased, he practises massage of the eye. It is necessary not to reduce too much such enlargements of the globe for fear of final atrophy. This intervention has much in its favor and is highly recommended by the author.

Simple Test for Equilibrium of Eye Muscles.—Many cases of headache and neuralgia coming to the general practitioner are dependent upon a slight and unnoticeable lack of equilibrium of the muscles of the eye. In order to determine whether or not there is any such defect and whether or not an oculist's opinion is necessary a very simple method is proposed by F. C. RILEY (*Med. Rec.*, Mch. 22, 1902). A homeopathic medicine vial is filled with water or, preferably, with a red liquid and surrounded by a piece of paper, upon both sides of which an oblong opening has been left, the openings being opposite one another. Hold the vial in front of one eye and the distorted image of the candle flame, due to the cylindrical shape of the vial, passes horizontally to and fro as the vial is moved laterally. Provided the red band passes through the middle of the candle flame as the vial is moved from right to left, it shows that the eyes act harmoniously in the vertical plane. The vial may then be turned horizontally and moved up and down, when lateral deviations of the two lights should be noted. If the red line pass through the candle flame, lateral equilibrium exists.

Posterior Ulcer of the Cornea.—It is admitted generally that ulcer of the cornea begins in the anterior layers and that accumulation of pus in the anterior chamber is only the consequence of the destructive process. In studying the pathological anatomy of purulent keratitis, Elschnig arrives on the contrary at the conclusion that if there exist a relation of cause and effect between these two symptoms, it is not the ulceration but the hypopyon which is the primitive factor. The poison of the pus contained in the anterior chamber brings about an alteration of the epithelial cells of the membrane of Descemet, and thereafter determines a loss of substance of the posterior surface of the cornea. This conception, based exclusively on the anatomical considerations, is warranted by clinical findings in two cases observed and reported by S. KLEIN of Vienna (*La Sem. Méd.*, Mch. 19, 1902). In these there was an ulcer on the posterior surface of the cornea without the least possible ulceration of the anterior surface. It therefore goes without saying that the ordinary means of treatment habitually employed against ulcer of the cornea, like instillations of atropine and cocaine, antiseptic washes, insufflation of iodoform, cauterization, etc., cannot possibly reach the lesion if it be situated on the posterior surface. The keratotomy of Saemisch, which is usually employed as a last resource, is directly and immediately imposed by this condition. If the pus

be once evacuated, it is necessary to keep the wound open to drain away any which may collect. If the supuration stop cicatrization will rapidly occur. Klein has added faradization to the operation of Saemisch in order to quiet pain which sometimes persists notwithstanding the paracentesis of the cornea, and has met with success.

MEDICINE.

Rubella and the "Fourth Disease."—The assumption that rubella includes in its name more than one disease and that the two well-known types are really quite distinct affections would lead to even greater difficulty of diagnosis between rubella and scarlatina and measles than has heretofore existed. J. P. C. GRIFFITH (Phil. Med. Jour., Apr. 12, 1902) argues against the adoption of a "fourth disease" and adheres to the idea of extreme variations from one type, which have been called rubella scarlatiniforme and rubella morbilliforme. In a typical case of one form the spots are the size of a split pea, have the purplish red tint characteristic of measles, are grouped and slightly elevated. In the other form the rash is confluent or in patches, not elevated, and produces a general redness simulating scarlet fever. Midway between these types comes the ordinary rubella with characteristic rose pink spots. The author observed an epidemic in a home for children in which the general symptoms of all the cases were the same, yet the patients presented all the varieties of the eruptions just enumerated, some of which, had they been observed in isolated cases, would have been diagnosed as measles or scarlatina. The writer believes that rubella, as well as the other infectious disease, is liable to variations in type, both in the individual and in epidemics, and that aberrant cases and forms and even aberrant epidemics arise. A new name should not be applied to each. The most important evidence of the existence of a fourth disease is still lacking in that the occurrence of rubella scarlatiniforme will fail to protect from an attack of rubella morbilliforme and *vice versa*.

Combating Meteorism.—It is usually observed in death from peritonitis or intestinal obstruction that the pulse can no longer be felt, although respiration appears to remain fairly strong. The mechanical influence on the heart action in such conditions has been made a subject for animal experiment by A. OPPENHEIM (Deut. med. Woch., Mch. 27, 1902). An artificial tympanites was caused by inflating the gut with air through the rectum in rabbits. If unrelieved death occurred in a few minutes. When an artificial anus was made, relief was almost immediate. In this animal a hypodermic of physostigmine salicylate, gr. $\frac{1}{32}$, was followed by marked peristalsis with discharge of gas and feces. Further experiments were made and smaller doses of physostigmine given, from which it was definitely determined that the respiratory center is not involved in this phenomenon and that breathing continues even after the heart beats can no longer be demonstrated. Although of apparently great value as a peristalticum, the action of physostigmine is too uncertain individually to warrant at present its more extended use. Atropine was also injected, but although increasing doses up to one gram were given, little reaction was observed. The author believes that physostigmine cannot be given when marked tympanites has existed for some time and when the smooth muscles have become completely atonic from stretching. In his experiments the author found that the effects were noted only after the gut had become relaxed by creating an artificial anus and believes that this indicates a method to be pursued in severe or practically hopeless cases.

Syphilitic Stenosis of the Small Intestine.—Stenosis of the small intestine due to the healing and con-

traction of syphilitic ulcers is not a common occurrence. Strictures due to this cause or following the ulcerations of dysentery are more likely to take place in the lower bowel, whereas those occurring in the small intestine are more commonly ascribed to tuberculous ulceration. Two cases of syphilitic stenosis are described by F. ROSENFELD (Berl. klin. Woch., Apl. 7, 1902). In the first instance an operation was performed for chronic obstruction and the patient was discharged cured after a resection of the jejunum and end-to-end anastomosis. Microscopical examination of the resected gut was reported to show "typical small-celled luetic infiltration of the intestinal wall with stenosis." A preoperative diagnosis could not well be made in this case on account of the age of the patient (forty-six), although the constant absence of pus and blood, both from the stomach contents and from the dejections, spoke against carcinoma. In the second case described by Rosenfeld, the family history, the loss of weight and the history of a previous pleuritis suggested tuberculous ulcer with stenosis. In view of a history of syphilitic infection of seven years' standing the diagnosis of lues of the intestine was made and specific treatment was at once begun. A tumor had been felt to the right of the umbilicus; this rapidly diminished in size and in a few months disappeared. The inference from these two cases is that it is worth while to consider lues in every case of chronic stenosis of the intestine, and a syphilitic history is especially to be sought when stenosis occurs in a youthful individual and when tuberculosis can be ruled out.

Clinical Aspects of Hepatic Insufficiency.—Moderate degrees of hepatic insufficiency are associated with atrophic cirrhosis, fatty and amyloid degeneration, cardiac liver, secondary hepatic cancer, biliary infection, appendicitis, and a large number of digestive infections and intoxications. Signs of exaggeration of hepatic function may be present in hypertrophic (biliary) cirrhosis, in primitive carcinoma of the liver, in simple acholuric icterus. Certain forms of hepatic insufficiency tend to individualize themselves. These are discussed by DUCAMP (Gaz. Hebdom. de Méd. et de Chir., Apr. 6, 1902). During an attack of intermittent fever of biliary obstruction the liver loses temporarily at least part of its power to transform into urea the nitrogenous products with which it is supplied. In hepatic troubles, in which a diminution of urea-production takes place, the diuretic action of urea is wanting and a notable falling off in the quantity of urine eliminated is the result. In advanced hepatic cirrhosis Bouchard has shown that a veritable anuria is approximated. The symptoms of renal alteration resulting from hepatic insufficiency include albuminuria, hyaline and granular casts, diminution of urinary toxicity, retardation of the elimination of methylene blue. Glycosuria, due to hepatic insufficiency, may at first be present only after the evening meal. When the condition is more advanced glycosuria is constant, but is exaggerated during the hours directly following the ingestion of food. When glycosuria is really due to hepatic insufficiency it is accompanied by diminution in nitrogen elimination, by urobilinuria, and by indicanuria. Incidentally there may be gingivitis, impotence, neuralgia, cutaneous lesions, cataract—all associated with the diabetes. In these cases hepatic extract is rational medication, and its administration restores the urea elimination to its normal level and tends to abolish the glycosuria.

Latent Pneumonia.—The causes of sudden death, which are of such enormous importance from the standpoint of medical jurisprudence, comprise a considerable number of the acute diseases. Of these the first in point of importance is pneumonia, which, according to LITTLEJOHN (Edin. Med. Jour., Apr., 1902), sometimes first betrays its presence by causing a sudden and rapidly

fatal collapse. He gives a detailed analysis of thirty-three cases of true latent pneumonia in which he performed autopsies in person. All of the cases had certain characters in common, demarking a definite type of the disease. The disease was practically unsuspected during life. At most, the patients complained of a slight indisposition, sometimes of shortness of breath, pain in the side, etc., but never sufficiently to excite alarm or to demand medical interference. Death occurred suddenly, or followed within an hour or two after the appearance of serious symptoms. In several instances it took place during the night in bed, in others during the day, on the street, or at home, and in the latter case it was frequently the apparent result of some slight exertion. The pathology of the disease is fairly typical. It is apt to be well advanced, the lung, in the majority of instances, being in a state of grey hepatization. Its distribution is generally basal and lobar. The apical form is rarely latent throughout. It may be latent even though involving the whole of one lung, or a considerable portion of both lungs. Latent pneumonia is most common in the male sex and after the age of forty. It is practically confined to persons addicted to excessive alcoholic intemperance. The explanation of latency is to be found in the quantity of alcohol consumed after the onset of the disease—first, in masking the ordinary signs and symptoms by dulling sensibility; second, by its stimulating effects, enabling the person to go about until he suddenly collapses and dies.

Desquamation in Scarlet Fever and Infection.—The old view has been that when the skin peels in scarlet fever it carries with it the means of infection. C. K. MILLARD (Lancet, Apr. 5, 1902) addressed to the members of various hospitals for infectious diseases throughout Britain, a circular letter with the following inquiries, with a view to tabulating the opinions given in the answers: (1) Can you adduce any evidence experimental, statistical or clinical, tending to prove that desquamating epithelium is *per se* a source of infection? (2) Do you consider that too much importance has in the past been attached to desquamation as a source of infection? (3) Does your experience support the popular belief that desquamation after scarlet fever is necessarily an indication that the patient is still infectious? (4) Does your experience lead you to believe that a patient may continue to desquamate, especially on the feet, before and sometimes after he has ceased to be infectious? (5) Does your experience lead you to believe that it is necessary in order to prevent the spread of infection that patients, who are otherwise ready to leave the hospital, should be detained there until every visible trace of desquamating epithelium has disappeared? Twenty-one of the twenty-five letters sent out were answered with the following results. The replies were divided into two groups, those taking the new view and those adhering to the old or occupying an intermediate position. Sixteen of the authorities answered the first question negatively, the second positively, the third negatively, the fourth positively and the fifth negatively. In the group of such authorities as adhered to the old or intermediate view much less uniformity is possible. Unfortunately, the question as to whether or not the epithelium when desquamating contains the infecting element cannot be answered until further advances have been made in bacteriological research. It is certain that in small products the groups do contain the germ, but in scarlet fever the eruption is an erythema, a process characteristic of chemical poisoning or of poisoning by the chemical products of microbic action rather than by the direct action of the microbes themselves. The author's own experiments have not been very extensive, but are suggestive. In Leicester

from September 14th to December 14, 1901, he reduced the minimum stay in the hospital for scarlet-fever patients to four weeks. The total cases sent out were 190 and the return cases directly attributable to them were only 5. Of the cases which caused the infection of these 5 return cases, 4 had discharge from the nose and 1 an unhealed crack behind the ear. In addition the third case was still desquamating at the feet. None of the other patients were desquamating. At least, as far as this record goes, it seems likely that these chronic discharges were more probably the source of infection than were the scales of the skin as they were shed. Whether or not this will in time prove to be, scientifically the whole truth remains to be seen. Meanwhile, the author agrees that it would probably be unwise to disabuse the public of the old idea that the skin does convey the poison, because otherwise many scarlet-fever patients would be turned loose among their comrades ten to fourteen days after the onset of the disease, because, if the disease had been of a mild type, they would be physically able to go about.

Antityphoid Inoculation.—A report from Lieutenant J. W. West in South Africa, concerning recent statistics in typhoid fever of antityphoid inoculation among the soldiers in South Africa, is published by A. E. WRIGHT (Lancet, Apr. 2, 1902). Briefly, the summary is as follows: In a regiment of 747 men and officers, 547 were uninoculated; 23 cases, or 4.2 per cent.; 7 deaths, or 1.3 per cent. of the whole, or 1 in 3.3 of those stricken. The inoculated were 200; 3 cases, or 1.5 per cent., with no deaths whatever. If one adds this admirable record to similar ones already in hand, it is plain that the promises of antityphoid serum are rapidly being fulfilled.

Serum in Scarlet Fever.—Since the discovery of antidiphtheritic serum a number of experiments have been attempted, often with little success, to apply the same principle of progressive immunization to various animals by means of cultures or toxins of microbic origin with the view of obtaining curative serums for other infectious maladies, such as cholera, smallpox, typhoid fever, etc. The eruptive fevers and in particular scarlet fever have not lent themselves to these researches, because the agents producing them are not very fully known, but as a first attempt to answer the general question of immunization in these allied diseases, it has been asked, whether the serum from the blood of subjects recently cured of scarlet fever, for example, might not be capable of exercising favorable influence against this disease? WEISBECKER (La Sem. Méd., Mch. 26, 1902) has shown that such injections seem to make the patients feel better, but do not have a very definite effect upon the various other symptoms, such as the fever and local signs. The results were, in short, somewhat contradictory. E. von Leyden, O. Huber, F. Blumenthal have also carried out a similar series of experiments. Von Leyden injected only 10 cubic centimeters of serum from convalescents, and later 20 cubic centimeters without ever seeing any bad symptoms. He estimates, furthermore, that with advantage this dose may be increased. It goes without saying that it is of the highest importance to be certain that the subject furnishing the serum is exempt from various diseases. This serumtherapy was applied in about 16 cases. One of them was a woman, who after an abortion suffered also from scarlet fever. In her case the result was remarkable. In 15 other patients, 6 gave positive and 9 doubtful results after treatment. Von Leyden thinks that his experiments have proved great possibilities for this form of treatment.

Treatment of a Case of Menière's Disease.—A case of Menière's disease which came under the ob-

servation of J. GESCHKEIT (Berl. klin. Woch., Apl. 7, 1902) occurred in a patient, forty-eight years of age. Four years ago the patient had fallen unconscious on the street and had vomited. After this attack he experienced a buzzing in the left ear and dizziness, and there was some loss of hearing on the left side. Attacks became more and more frequent, occurring four or five times a day. Hearing on the left side became more and more impaired until it was almost entirely gone. There were no convulsions at the time of the attack or at any other time. The patient felt as if he would fall to the left and to prevent this seized hold of some stationary object to protect himself. Syphilis was denied; a history of moderate alcoholism was obtained. Examination showed that the right ear was normal. The left ear heard the Politzer acumeter at a distance of ten centimeters, a whisper at one-half meter, the tick of a watch close to the ear; the tuning-fork placed on the skull in the median line was heard distinctly with the right ear, very poorly with the left. The left ear was very sensitive to the galvanic current; a current of two or three milliamperes produced, according to the patient, a tone resembling the sound of a tuning-fork. Application of the anode was not followed by any visible inclination of the head toward that side, nor was the application of the cathode followed by bending of the head away from the cathode. The passage of a galvanic current for one or two seconds caused the patient to feel dizzy. After unsuccessfully trying potassium iodide, iodipin and quinine, the galvanic current was resorted to. The positive electrode was placed over the tragus on the affected side, the negative pole over the cervical spine; a current of three or four milliamperes was used every second day. After twenty-five sittings the patient ceased to experience dizziness. Tinnitus was still present, but in a much milder form, and hearing was vastly improved. The acumeter could now be heard at a distance of half a meter.

PHYSIOLOGY.

Glycosuria and Narcosis.—The modern investigations on the pathogenesis of diabetes mellitus cannot fail to be strengthened by the study of those metabolic disturbances occasioned by the administration of certain drugs and resulting in a transient glycosuria. A very suggestive line of research was that undertaken by E. BENDIX (Ctblt. für Stoffwechsel und Verdauungs Krankheiten, Mch., 1902) on the relation between certain drug-narcoses and alimentary glycosuria. A recently published case of W. Ebstein was that of a rather obese diabetic woman who, as the result of a regulated diet, improved to such an extent as to eliminate in her urine only a few grams of sugar *per diem*. Her life being endangered by an umbilical hernia, she was operated upon under chloroform narcosis and recovered without mishap. Of great interest was the influence of the chloroform on the metabolism of the patient; the sugar elimination immediately after the operation reached the extraordinary height of 180 grams per day, which lasted for some time. Besides cases such as this, there have been found described in the literature, cases in which after chloroform narcosis a genuine severe diabetes developed in patients in whose urine before the operation not a trace of sugar had been found. Bendix conducted an experimental investigation on dogs to determine the effect of chloroform on alimentary glycosuria. He found, in the first place, that dogs which had been chloroformed for from one-half to one hour, showed no trace of sugar in the urine. He fed these dogs on large quantities of grape sugar, and after from eight to twelve hours he examined their urine for sugar and found none. The next day after feeding them with an equal quantity of sugar, he kept them in a condition of chloroform

narcosis for from one-half to one hour, and after the lapse of a few hours sugar was found in their urine. The same results were obtained after the dogs had been under the influence of profound morphine narcosis. Ebstein's explanation of these phenomena was that chloroform causes a considerable damage of the protoplasm and occasions a deficient respiration of the tissues, i. e., a diminished intake of oxygen and a diminished output of carbon dioxide, resulting in an insufficient metabolism of the grape sugar. This explanation was fortified by the researches of Winterstein, who found that animals under the influence of chloroform take up less oxygen than normally.

Chemical Nature of Digestive Enzymes.—Although the only exact knowledge of the enzymes has been restricted to the mode and nature of the transformations they occasion in other bodies, all attempts at elucidating the intimate chemical structure of the enzymes have not been entirely without success. Two years ago it was discovered by H. Friedenthal that the pepsin in the gastric juice of the dog is separated from the mucous membrane in the form of a very complicated compound, resembling nucleo-proteid, and is precipitated in the cold by mere dilution of the gastric juice; this body giving rise to the following splitting-products characteristic of nucleo-proteids, namely, pentoses, xanthine bases, phosphoric acid and albuminous bodies. Similar bodies were found in preparations of other digestive enzymes and in each case, a solution rendered free of nucleo-proteid was deficient in zymotic activity. According to H. FRIEDENTHAL and S. MIYAMOTA (Ctblt. f. Physiologie, Mch. 29, 1902), the above results left open the question as to whether all the components of this giant molecule are necessary for the manifestation of zymotic activity, or whether from among the splitting products of this compound an active enzyme might not be obtained. In the case of pepsin, as well as of trypsin and invertin, they succeeded in obtaining active zymotic preparations which by virtue of the negative orcin reaction showed the absence of nucleic acids, and which also by the failure of the characteristic color reactions, of which that with Millon's reagent is one, showed the absence of albuminous bodies. These results proved conclusively that the digestive ferments have a structure more complicated than the nucleo-proteids, for, besides nucleic acids and albuminoids, they contain a third chain of bodies of unknown structure in which is to be found the active enzyme. The latter when purified contains less ash than the secreted substance, and, as shown by the results of dialysis, belongs to the group of colloids, or is at least of a highly complex molecular structure and incapable of permeating thick parchment paper. The chemical nature of this compound will probably be revealed by further investigation. These researches indicate that it is unnecessary to ascribe zymotic activity to albuminous bodies.

Chloroform and Sudden Death.—It is generally agreed that death occurring during the administration of chloroform is to be attributed to its toxic action upon the heart. To what extent chloroform acts directly upon the heart tissues and to what extent this action is upon the vagus mechanism were the subject of an investigation by E. H. EMBLEY (Jour. of Physiol., Mch. 27, 1902). As the result of a large series of experiments on two hundred and ninety-eight dogs, he found that no sudden failure occurred from the action of chloroform upon the isolated heart; that the fall of blood-pressure was gradual or steep according to the percentage of chloroform vapor in the air administered; that there was no abrupt variation in the rate or efficiency of the heart such as occurs in an animal with an intact nervous system. On the isolated heart, chloroform has an immediate and progressively paralytic action; there is no

preliminary period of stimulation and there is no sudden change in the rate or force of the heart beat. Heart muscle is very sensitive to the poisonous effect of chloroform. In the administration of chloroform by inhalation to the intact animal, the vapor tension of the chloroform in the blood only slowly reaches that of the inspired air. The investigation of the effect of chloroform upon the cardio-inhibitory mechanism, showed that chloroform raises the excitability of the vagus mechanism, particularly in the early part of the administration; that the increased excitability is due to the action of the chloroform on the vagus roots, and that the inhibitory action is more intense from being exercised upon a heart the native excitability of which is diminished by the action of chloroform upon it. This drug, when administered to morphinized dogs in air containing not more than 1.5 per cent. of the vapor, after a period of mild excitation slowly depresses vagus excitability. The latter may again be raised according to the duration of the administration or the endurance of the vagus by increasing the percentage strength of the vapor or by asphyxia. Section of the vagi or atropinization in dogs absolutely abolishes sudden heart arrest from chloroform. The heart under such conditions fails slowly with rapid pulse and diminished contraction volume. The danger of vagus inhibition of the heart lies chiefly in the earlier part of the administration before the initial increased excitability of the vagus mechanism has been succeeded by diminution. These results show that at least in dogs vagus inhibition is the great factor in the causation of sudden death from chloroform. Failure of respiration is mainly to be attributed to fall of blood-pressure. With a good blood-pressure failure of respiration by inhalation of chloroform is practically impossible. Restoration of failed respiration is dependent upon restoration of blood-pressure.

The Action of Diastases.—One of the most interesting problems in modern physiological research is that which is concerned with the various digestive enzymes. These hitherto mysterious bodies, of which little more than the name has for a long time been known, are being carefully investigated and understood. H. M. VERNON (Jour. of Phys., Mch. 27, 1902) studied the differences in action of various diastases on dilute starch solution, comparing the rate of progress in the color reactions with iodine in the case of each diastase. The nature of the liquid used to extract the enzymes is practically without influence on the rate of progress of the color reactions. The progress of the latter, however, varies considerably according to the nature of the diastase employed. Thus with ferment sufficient to give an achromic point time of ten minutes, extracts of pig's and dog's pancreas take about two and one-half minutes to digest starch to the deep violet stage and seven minutes to digest it to the red-brown stage. Extracts of sheep's and ox's pancreas take only about one and one-eighth minutes to digest the starch to the violet stage and four and one-half minutes to the red-brown stage, whilst extracts of human pancreas take intermediate times. The rate of change is not much affected by the addition of sodium chloride or of a minute quantity of hydrochloric acid, or by varying the dilution of the starch from 1 per cent. to .125 per cent., but is greatly influenced by temperature. The rate of conversion of starch into maltose by extracts of sheep's and ox's pancreas is more rapid at first than with pig's pancreas or with human saliva; but at the achromic point time the amount converted varies only from 59.7 per cent. to 56.9 per cent., with the different ferments. After three hours' digestion at 38° C. the amount of starch converted by pancreatic extracts was always slightly over 70 per cent.; by human saliva about 80 per cent.; and

by malt extract after only ten minutes action 79 per cent. was converted, but after three hours 80 per cent. It is an interesting observation that in the various experiments the percentage of starch converted into maltose was always a multiple of ten, either 20 per cent., 30 per cent., or 80 per cent. The author in agreement with Brown and Herron concluded that the simplest formula for soluble starch is $10C_{12}H_{20}O_{11}$, and that $C_{12}H_{20}O_{11}$ groups are successively split off and converted into maltose. There is a tendency of the starch molecule to undergo hydrolysis in tenths. The difference in action of malt and pancreatic diastases indicates that they are essentially different bodies. The one is of vegetable and the other of animal origin, and the author concludes that the most convincing argument indicating the dissimilarity of these enzymes is to be found in the fact that there is no instance of a complex organic body such as a proteid common to members of both animal and vegetable kingdoms. Salivary diastase is different from pancreatic, and the pancreatic diastases of different animals are different bodies.

The Digestion of Cane Sugar.—In a research on the inverting action exerted on cane sugar by different portions of the alimentary canal, J. H. WIDRICH (Jour. of Phys., Mch. 27, 1902) found that while the intestinal mucous membrane of the pig inverts cane sugar freely, portions free from Peyer's patches are more active than those containing the patches. The inverting action is not exerted in an acid medium, but the enzyme is not destroyed by acid, its action being merely suspended. Lymphatic glands do not contain an inverting enzyme. The gastric mucous membrane contains an enzyme which acts in an acid medium, not in an alkaline one. Proteids interfere with or stop the inverting action of dilute hydrochloric acid. Gastric juice contains an inverting enzyme. Saliva has no action on cane sugar. Harris and Gow showed that the pancreas has no inverting enzyme.

Function of the Suprarenal Capsule.—Among the most widely-accepted doctrines concerning the suprarenal function is that which declares its office to be the secretion of a special substance which maintains the tonus of the cardiovascular system. Certain it is that suprarenal extracts introduced into the organism are shown to contain a substance which produces a condition of hypertonia. This substance, according to Fraenkel, belongs to the ortho-diazo-benzoic series, and to it he has given the name of sphymogenine. It is believed by some to exercise a tonic effect upon the cardiovascular centers of the medulla oblongata; by others its influence is thought to act upon the general muscular system. I. SALVIOLI and P. PEZZOLINI (Gazz. degli Osped., Mch. 23, 1902) have sought the solution of that part of the problem which deals with the question of the secretion of this substance by the glandular elements during life or its development as a decomposition-product in the extract. To this end blood was withdrawn from the suprarenal vein of a dog and at once introduced into the jugular vein of another dog. Sphygmographic and pneumographic tracings, taken immediately after the injections, showed increased arterial pressure, decreased frequency of cardiac systole, but increase in its strength; with slow and superficial respiration. In the control experiments with blood from the general circulation, these phenomena were not produced. The circulatory and respiratory changes caused by injection of blood from the suprarenal vein were identical with those induced by injection of suprarenal extract; hence it is concluded that the substance producing these effects is a product of the internal secretion of the suprarenal capsule.

The Pulmonary Circulation.—The balance between the circulation of the system at large and that

through the lungs must be a nice one to insure the proper aeration of the blood. T. G. BRODIE (*Lancet*, Mch. 22, 1902) has been conducting experiments upon animals with reference to the determination of the pressure changes in the pulmonary artery. One of the means he used to this end was drugs, and among them the suprarenal extract, the effect of which he notes in the following terms: It is known to cause a large rise in aortic pressure due to peripheral constriction, to increase the heart-rate and nearly double its output of blood by a complicated effect if the vagi be undivided by a marked inhibition of the heart, occurring mainly during the period of heightened aortic pressure. Its effect on the blood volume of the lung is to cause a small diminution soon followed by a marked increase persistent during and subsequent to the rise in the aortic pressure. Thus the main effect is to produce a distinct congestion of the lungs. The effect upon the pulmonary blood-pressure is a rise to nearly double value, commencing with and lasting longer than the rise in the aorta. The pressure in the left auricle falls at first, then rises when the aortic pressure has reached its maximum. The action of this drug on the pulmonary arteries by direct perfusion gives a striking result, causing the opposite of what takes place in the systemic vessels under it, namely, instead of a constriction to almost closure, it causes a marked increase in the rate of flow. In only one instance was constriction obtained and then to a less degree than in the limb. These experiments are of course of importance in considering whether the suprarenal extract is of value in hemorrhage from the lungs, but conclusions up to the present must be somewhat guarded because experiments have not yet sufficiently decided the action of small doses.

Dextrose and Metabolism.—It is a fact generally accepted by physiologists that many substances, of which peptone and albumoses are examples, when absorbed through the alimentary tract are highly nutritious, but when injected into the subcutaneous tissue are distinctly poisonous to the bodily structures. J. SCOTT (*Jour. of Physiol.*, Mch. 27, 1902) shows that dextrose belongs to this class of substances. It had been shown by Kossa that the subcutaneous administration of cane sugar in the dog and rabbit, produced a marked increase in the total amount of nitrogen, urea and ammonia in the urine, which continued for some time after the administration of the sugar, and that this was associated with great emaciation of the animals; these observations tended to show that cane sugar, administered in this way, has the effect of increasing the disintegration of proteids. Scott shows that large injections of dextrose, from 5 to 7 grams per kilo of body weight, cause a marked increase in proteid metabolism. The subcutaneous injection prevents the dextrose from being acted upon by the liver or at once excreted by the kidneys, so that it is as far as possible acted upon by the general tissues of the body. Under these circumstances dextrose or more probably an acid derivative of dextrose acts like such toxic agents as phosphorus, poisoning the organism. A diminution in the proportion of nitrogen built into urea is also caused, and in this respect the administration of dextrose produces an effect similar to that induced by giving diphtheria toxin or such drugs as sulphonal which interfere with the metabolic processes.

The Spleen and the Formation of Red Blood Cells.—It is generally taught and almost universally stated in the text-books that the spleen is one of the organs concerned in the production of red blood-cells. The latest researches indicate that the spleen plays no such rôle. The results of a large number of experiments performed by D. N. PATON, G. L. GULLAND and J. S. FOWLER (*Jour. of Physiol.*, Mch. 27, 1902) show

that in dogs and cats there is no difference in the number or in the character of the erythrocytes in the blood going to and in the blood coming from the spleen, but that there seems to be a slight diminution in the number of leucocytes, and more especially of the polymorphonuclear cells. Removal of the spleen in dogs, cats and rabbits has no influence upon the number of the blood-corpuscles, nor upon the proteids of the blood-plasma, at least in dogs. It seems to be followed by a slight fall in the proportion of eosinophile leucocytes. After hemorrhage in rabbits and hemolysis in dogs, the normal number of erythrocytes is regained as rapidly in animals without the spleen as in those with the spleen. The injection of extracts of the spleen in rabbits does not cause the increase in the erythrocytes which is produced by the injection of extract of the bone-marrow.

Ligation of Renal Arteries.—In order to determine a question of great importance, namely, whether after complete ligation of the renal arteries the glomeruli are or are not cut out of the circulation, A. P. BEDDARD, (*Jour. of Physiol.*, Mch. 27, 1902) conducted a series of experiments on the frog with the following results. Ligation of all the arteries to the kidneys cut the glomeruli permanently out of the circulation; injection of the kidneys by way of the renal-portal veins gives no evidence of the possibility of a collateral circulation being set up from the renal-portal capillaries through the glomeruli. When all or a certain proportion of the glomeruli are cut out of the circulation, no spontaneous secretion of urine takes place. If urea solutions be injected into the dorsal lymph-sac of such frogs, no secretion takes place if all or the greater part of the glomeruli are cut out of the circulation. The cutting off of the arterial blood supply of the kidney causes the epithelium of the tubules to degenerate rapidly.

Urea Estimation.—The importance of appreciating the character and activity of the metabolic processes of the body, whether they are abnormally energetic, with destruction of the somatic tissues, or, on the other hand, extraordinarily sluggish, with a tendency to lead to fatty degeneration, seems obvious enough. The present method of comparing the average normal amount of urea in a twenty-four-hour urine with that found in any given case, and so rapidly determining an excess or a deficiency, is most unsatisfactory and inaccurate. Prof. BEHREND (*Amer. Med.*, Mch. 15, 1902) points out a method which is sufficiently simple and by means of which the metabolic processes can be much more carefully gauged. There are two sources from which the body derives the nitrogen present in the excreta: (1) The food, and (2) the tissues of the body. These sources, which are ordinarily variable, easily lend themselves to control. A diet is selected, of which the nitrogenous content is carefully estimated. The author suggests the following: 1½ liters of milk, 6 eggs, 250 grams white bread, 45 grams butter. This represents about 2,250 calories, the quantity necessary to sustain an individual weighing 130 lbs. in a state of health. The nitrogen in the diet amounts to about 13 grams. The nitrogen derived from the tissues can be approximately controlled by putting the individual to bed and keeping him at "physiological rest." A healthy person, whose metabolism is thus controlled soon reaches a state of nitrogenous equilibrium, in which the amount of nitrogen ingested is equal to that excreted. The sources of nitrogen are thus easily controlled. Nitrogen is excreted principally in the urine as urea, and also in the feces; the former contains about 80 per cent. of all the nitrogen excreted. Of the urea molecule, nitrogen constitutes 46½ per cent. by weight. Knowing these facts, and having estimated by any of the well-known laboratory methods the amount of urea

passed by the patient in twenty-four hours, one is in a position to calculate the entire amount of nitrogen excreted by the following formula: Amount of urea $\times .46\frac{1}{2} \div .80$, or, more simply, amount of urea $\times \frac{1}{2}$. The resulting figure is to be compared with the amount of nitrogen contained in the ingesta, and an estimation of excess or of deficiency arrived at. The method certainly represents a great advance on the primitive procedures used in most laboratories; it is itself, however, subject to many sources of error and might easily yield enormous variations.

Parathyroid Glands in Man.—Recent study of the thyroid gland has led to the discovery of organs situated in its vicinity which, although inferior in volume, are of equal if not greater interest. Besides the inconstant accessory thyroid glands, not infrequently observed, other glands have been discovered in the cervical region; described first by Sandstroem and called by him parathyroid. These are constant, at least four in number, and comprise a superior and inferior group; so that to-day, for the primitive idea of a single thyroid body, we may substitute a thyroidal system, having intimate anatomical relations. A. CIVALLERI (Il Policlinico, No. 21, Fasc. 3, 1902) submits the results of personal investigation of this subject in the following statements: The two superior parathyroids are situated posteriorly to the thyroid corresponding to the junction of the superior two-thirds with the inferior third of the posterior thyroidal border; and are in relation with the inferior border of the cricoid cartilage, lying posteriorly to the inferior thyroid artery and recurrent nerve. This position, though most frequent, is not invariable, as the glands may be found, at times, in the median line lying against the trachea, or higher in more or less direct relation to the posterior branch of the superior thyroid artery. The inferior parathyroids are found in one of three locations: (1) Posterior to the lower part of the thyroidal lobes, this being the most frequent location; (2) immediately below the inferior margin of the thyroid; (3) situated from a few millimeters to some centimeters below the latter point, and even as low as the retrosternal adipose tissue. In both groups supernumerary parathyroids may be seen; this is true especially of the inferior group. Both inferior and superior parathyroids have the same structure, are of epithelial nature and have an internal secretion.

THERAPEUTICS.

Collargol (Crede) in Sepsis.—A most favorable report of the employment of this soluble silver preparation in a large number of septic cases is made by J. MÜLLER (Deut. med. Woch., Mch. 13, 1902). In all the cases (about twenty) he used a 1-per-cent. solution, giving from 1 to 5 cubic centimeters intravenously. Included in the list are erysipelas, meningitis, extensive cellulitis, mastitis, pelvic exudates, lymphangitis, empyema, tuberculous arthritis. In all cases immediate improvement was noted after one injection, and in severe cases several were given. No after-effects were noted except a chill following from one to four hours after the injection. The author places great faith in the method and its extended future use.

Treatment of Gout.—Apart from the treatment of an acute attack of gout, the results of which are usually satisfactory, the condition or conditions which predispose to such attacks and which keep the gouty individual in a state of more or less invalidism depend upon derangements of one or more of the great physiological systems. A. P. LUYF (Practitioner, Mch., 1902) believes that for the gouty diathesis the potassium salts are of distinct benefit and of these the citrate is probably the best. If given in sufficient doses it tends to diminish the acidity of the urine and increases the

solvent power of the urine for the uric acid salts. He has experimentally shown that the potassium salts delay and inhibit the conversion of the soluble gelatinous sodium biurate into the comparatively insoluble crystalline biurate. When there are no appreciable uratic deposits in the joints, and there are present a sluggish action of the liver and a gastro-intestinal catarrh, the sodium salts undoubtedly have a decided action. The lithium salts have no better solvent power upon the gouty deposits and possess the disappointing property of being strong cardiac depressants. Now and then a good dose of blue pill followed by Epsom salts or by a little calomel combined with euonymin and colocyn it will be found useful. To increase the circulation and improve the nutrition, baths and massage are indicated in the more chronic cases. In swollen joints, the seats of considerable deposits much benefit is derived from massage of each joint for a few minutes, followed by galvanism with the negative pole over the affected area. Radiant heat and superheated air baths have a more penetrating effect than other forms of heat and sometimes there is a progressive improvement for a long time after cessation of the baths. In gouty neuritis superheated baths followed by the constant current give, perhaps, the best results. In the treatment of gouty eczema attention should be paid to two details especially, the regulation of the bowels and the absolute abstention from alcohol in any form and especially the red wines. In the dry irritative stage the application of a lotion containing liq. plumbi subacetatis, \mathfrak{ss} ; liq. carbonis detergens, \mathfrak{ss} ; and aqua sambuci, ad \mathcal{Oj} , is very soothing, especially if followed by a powder such as cimolite powder. In gouty pruritus, carbolic-acid washes are useful, and in the chronic form sulphur baths are beneficial. If insomnia be present, examine the pulse and urine, for the tension is frequently high and a brisk purge is frequently more successful than hypnotics. As a preventive to gouty attacks guaiacum resin seems to have a decided effect and can best be given in cachets, commencing with doses of five grains three times a day and gradually increasing to ten or twelve grains. It can thus be taken without any discomfort to the patient. Quinic acid is recommended by some. No hard and fast lines as to dietary can be laid down in the treatment of gout. Simplicity of food means facility of digestion, but each individual must be consulted in regard to the things which disagree with him. The amount of fluids ingested is usually found to be much below what it should be, especially in women. As a rule alcohol should not be used at all, but some patients seem to need a little whisky or brandy. Although an excessive consumption of meats, particularly red meats, is a potent factor in producing gout, yet there are a few cases of chronic gout which improve and even recover on an exclusive diet of red meat and water. These are usually the cases of gouty arthritis which have failed to respond to the ordinary methods. This course of treatment should last from ten to twelve weeks, after which a gradual return to the ordinary diet should be made. In regard to climate a fairly bracing air with a low relative humidity is the most suitable for the gouty person.

Treatment of Scarletina.—Since the introduction of diphtheria antitoxin, other antitoxins have been tried for the other bacterial diseases with varying success. E. v. LEYDEN (Arch. f. klin. Med., Vol. 73) employs for the treatment of scarlet fever the serum of convalescents, on the supposition that certain bodies are produced in the blood which are capable of bringing the disease to a termination. Of a total number of sixteen cases, the results were satisfactory in but three and in nine they were slight. Deleterious influences could never be observed. It is essential that the serum

be obtained from otherwise healthy persons, that it be sterile and as fresh as possible when injected, and that it be administered early in the disease. Since there is as yet no method of measuring its strength, an arbitrary quantity, 20 cubic centimeters, has been employed.

Pyocetanin Blue and Ascites.—Ascites originating from disease of the heart and kidneys is usually a symptom difficult to treat. E. LOUSTVERK (La Sem. Méd., Mch. 19, 1902) has found that pyocetanin blue, in a daily dose of 0.03 grams divided into three pills, gave the following results in eleven patients: Two were troubled with persistent nausea compelling abandonment of the treatment, but in the nine others, to whom he had previously administered in vain the medicines usually employed, he noted after a few days an appreciable improvement, marked by the disappearance of the edema and dyspnea, and later by an improvement in the abnormal sounds of the heart. His opinion is that the good effects of the pyocetanin blue are due to its diuretic action and stimulation of the sweat glands. In order to avoid gastric disarrangement, he recommends administering it not less than three hours after meals.

Morphine Derivatives.—A great deal of labor has been expended during the last few years by pharmaceutical chemists in the effort to elaborate a more satisfactory substitute for morphine. The tendency to habit formation, the narcotic effects, the depressant action, are instances of the properties which it is often desirable to exclude or modify. Of the innumerable new derivatives, the most important are codeine, heroin, dionin, and peronin; these four have been studied with the utmost detail and precision by MAYOR (Rev. Méd. de la Suisse Rom., Mch., 1902), from both a clinical and an experimental standpoint. His conclusions are as follows: Peronin is a preparation of which the cardio-depressant effects are so marked as to exclude its use, inasmuch as its therapeutic value is not superior to that of codeine or of dionin. Dionin and codeine, on the other hand, are drugs which represent a permanent addition to the armamentarium. Dionin is in some respects preferable to codeine. It is more soluble and used hypodermatically is painless. It does not produce the euphoria so characteristic of morphine, and, in a less degree, of codeine. Hence, there is far less danger of habit formation. The narcotic effects are also less pronounced in case of dionin than in any of the other drugs of the group studied. Thus, as an anodyne and as a soporific dionin is of vastly inferior importance. On the other hand, it seems to exercise a specific and selective action upon the sensory terminations in the trachea and bronchi. It controls all forms of irritative and superfluous cough; it regulates respiration; it diminishes the feeling of dyspnea. In other words, it fulfils the same indications as does codeine, but produces less of the psychical effects of that drug. The properties of heroin place it midway between dionin and codeine, on the one hand, and morphine on the other. A powerful respiratory sedative, it produces at the same time a considerable degree of euphoria and of somnolence. It has a well-marked depressant action upon the heart and the vasomotor system. The practitioner has thus at his command a set of alkaloids which produce a graded series of effects of a very definite character. Evidently he must select that one which answers best to the indications in any given case. At all events, he will largely discard morphine in the enormous group of respiratory diseases.

Sodium Bicarbonate in Empyema.—Irrigation with a four-per-cent. solution of bicarbonate of sodium was the curative agent in a case of empyema described by L. BETANCES (La Rev. Méd. de Santo Domingo, Year 1, No. 2, 1902) in which incision, drainage, and lavage with boric-acid solution had failed to prevent re-

accumulation of pus. Daily irrigation with the bicarbonate solution for five days effected a cure.

Treatment of Eclampsia.—In the treatment of eclampsia no hard and fast rules are to be adhered to; it is of the greatest importance to individualize. The prophylaxis is especially emphasized by J. VEIT (Therap. Monatshft., April, 1902) in the form of strictest asepsis during delivery, diminished feeding by mouth and the use of narcosis in all vaginal exploration to prevent any irritation which may lead to new convulsions. When the cervix is fully dilated, the child is to be rapidly extracted in narcosis; if only partly, dilatation with the fingers or a slight nicking of the hard ring will generally do. If the cervical canal be not yet obliterated, rupture of the amniotic sac does good by reducing the intrauterine pressure, and, if necessary, a metreurynter may be inserted. Symptomatically, morphine, chloral by rectum, venesection and hot baths or packs act favorably upon the convulsions, though they do not heal. Recently radical procedures, such as Cesarean section and *accouchement forcé*, are advised in all cases in which the parturient canal is not ready for immediate delivery, but these methods as routine are frowned upon by the author since the mortality is not less high with more conservative measures. If, however, the condition of the patient become worse, they are indicated.

Intravenous Injection of Sodium Cacodylate.—Experience with over 400 cases has taught F. MENDEL (Therap. Monatshft., Apr., 1902) that sodium cacodylate, injected directly into the veins, is a perfectly safe and most efficient means of producing the full therapeutic action of arsenic. In anemia and chlorosis the treatment, continued for from four to six weeks, produced an effect such as was never seen with iron in any form. The common dose varied from 0.05 to 2 grams injected every second day. In the severe cases of tuberculosis only a tonic effect was noticed; no specific influence was manifest. In milder cases, a cure was effected. Diabetes was favorably influenced, cases of exophthalmic goiter showed marked improvement, and a number of nervous and skin affections were considerably benefited. The use of the drug in inoperable carcinoma, however, proved a total failure.

Prevention of Gall-Stones.—Eunatrol, the acid oleate of sodium, has been found by W. N. CLEMM (Therap. Monatshft., Apr., 1902) an excellent remedy for the prevention of gall-stones in those so predisposed, and he believes that all cases of uncomplicated cholelithiasis are curable by its use. Experiments showed that gall-stones readily crumbled up and dissolved if kept in a solution of eunatrol and there is every reason to believe that the drug is stored in the liver and there exercises a similar function. The only disadvantage is its bad taste, which can be overcome by pineapple essence or tincture of valerian.

Fate of Quinine in the Body.—Experiments on dogs, according to A. MERKEL (Arch. f. Path. u. Pharmac., Vol. 47, No. 3 and 4), show that quinine is totally decomposed in the organism with the exception of from 12 to 14 per cent. The figures remain about the same even after prolonged feeding with quinine. The undestroyed portion appears in the urine in the form of a basic compound. From a practical point of view the value of large doses is clear, since with small ones there is danger of too rapid decomposition of the absorbed alkaloid and little opportunity for an accumulation in the system. For this reason, also, subcutaneous doses are valuable.

Absorption of Carbohydrates from the Rectum.—Enemata of 60 grams of sugar or dextrine in from 120 to 200 c.c. of water, or of 100 grams of starch in 300

c.c. of water, according to F. REACH (Arch. f. exp. Path. u. Pharmak., Vol. 47, No. 3 and 4), do not increase the respiratory exchange of gases, while 60 grams of sugar in 120 c.c. of water by mouth do so to a marked degree. Glycosuria or dextrinuria does not take place. The examination of the stools is not practicable to determine absorption, since these substances undergo decomposition in the intestines. There is no question, however, that there is some absorption of sugar, though this is slight and very slow. Dextrine is absorbed still more slowly, but starch slowest of all, and its absorption decreases the longer this carbohydrate is in the intestines.

Potassium Salts in Chronic Arterial Tension.—Attention is called to this old therapeutic measure for the treatment (especially in gouty subjects) of high arterial tension by LAUDER BRUNTON (Deut. med. Woch., Apr. 17, 1902). The author found that the ordinary commercial saltpeter was more efficacious than the refined product, probably on account of the nitrites present. His modified formula therefore consists of a powder, to be given every morning in a large glass of water, which contains potassium bicarbonate, gr. xxv, potassium nitrate, gr. xx, and sodium nitrite, gr. ½. These powders can be given for a long time without ill-effects and the lowering of arterial tension is accomplished by diminishing the heart activity and increasing the caliber of the arteries. Such a mixture of nitrates and nitrites also has a marked diuretic action, which is of especial value in these cases.

Raw Meat and Tuberculosis.—The good effects obtained by C. Richet and J. Héricourt by treating tuberculosis in animals with raw meat and raw beef-juice have suggested to A. JOSIAS (La Sem. Méd., 1902, No. 16) the propriety of trying this method among children afflicted with the disease in varying degrees. His procedure is as follows: Every day the patient receives 500 grams of raw meat, from which about 15 to 20 c.c. of juice are obtained from 100 grams, and from 100 to 200 grams of chopped raw meat. It is necessary at the same time to stop completely all use of cooked meat, which the above observers have found is not useful in tuberculosis. Children as a rule take the meat-juice easily, sometimes pure, sometimes as a bouillon, cold or warm. For two years Josias has employed this treatment in the hospital on 24 children who were victims of pulmonary tuberculosis. The diagnosis was confirmed by an examination of the sputum and by an injection of tuberculin. The diet was added to the usual treatment in the hospital and gave the following results: Six patients with the disease in an early stage gave 4 cured and 2 improved; 6 in the second period registered 1 cured, 1 improved, 2 aggravated, and 1 death; 12 in the third stage gave 1 cured, 2 improved, 4 aggravated, and 5 deaths. In a total of 24 cases there were 6 cured, 6 improved, 6 aggravated, and 6 deaths. In basing his conclusions on these facts, the author thinks that the treatment with raw meat-juice and raw meat in a large quantity is of service and may bring about a cessation of the process, provided the case be one of pure infection. When the infection is mixed and the intoxication of the organism profound, this treatment is useless. The diagnosis, moreover, depends on the degree and extent of the alterations in the lungs and the general physical condition of the patient. The rapid increase in weight after the beginning of this treatment is a good sign of the reawakened resistance of the patient to the disease.

Erysipelas and Red Light.—Two years ago V. Bie of Copenhagen, in a discourse on phototherapy, presented the good effects of long exposure to red light in smallpox and raised the question as to whether it would not be convenient to employ the same procedure in all

infectious diseases with eruptions of the skin, especially scarlet fever and erysipelas. H. KRUKENBERG (La Sem. Méd., 1902, No. 16) reports a series of 18 cases of erysipelas, of which 15 were facial, treated in this way. A room surrounded by red glass was the abode of the patients, so that by day the sunlight was red, and by night all artificial light was made red by means of lamps similar to those employed in photography. In only the first 3 of the 18 cases were wet dressings of alcohol used. The red light seemed to exercise a great influence upon the disease, especially upon the length of the fever. In 7 cases the fever disappeared in less than twenty-four hours and in the other 11 patients in from one to ten days; in 2 after six and seven days. It is necessary to add that in one of these two patients the erysipelas was accompanied by more or less grave general troubles which were almost entirely absent from the other cases. The treatment could not be carried out in all its rigor because the patients were in bed in a room with only four windows, some of which had to be opened part of the time. If this light treatment ever show itself serviceable against erysipelas, it is not because the red rays have a specific action, but simply because they are the only ones which do not have any action one way or the other upon such diseases. In order to assure the success of the treatment, it is necessary to exclude absolutely all other light from the room. It is, however, well to note that the recovery which occurs under this treatment is very prompt. It is not at all fixed, as is shown by the disastrous relapses following any interruption of the process.

Silver in Lavage.—Lavage with a solution of nitrate of silver as a cholagogue is a new procedure, recommended by F. EHRLICH (La Sem. Méd., Apr. 16, 1902) for grave cases of angiocholitis, cholelithiasis, cholecystitis, etc. If the patient be seen early in his disease, the treatment is begun by washing out the stomach with water at 40 to 50° C. until the fluid returns completely clear. Then by introducing 500 c.c. of a solution at the same temperature of 1 per cent. nitrate of silver in distilled water, after letting the liquid act for from one-half to two minutes, it is withdrawn and the process repeated. Finally, washing with ordinary hot water is continued until the fluid ceases to show turbidity. The whole procedure should last from ten to fifteen minutes and should not be begun until the patient is accustomed first of all to ordinary gastric lavage, because without it the leaving of the nitrate of silver within the stomach may give rise to intoxication. The lavage should be performed immediately before eating, should never be painful, and with nervous patients should at first be carried out only every other day. Meanwhile, a proper diet should be followed. After a few of these washings, the liver will be seen to grow a little larger and the bad symptoms at first increased; then when the treatment is continued a bilious diarrhea will occur, and the enlargement of the gland and other abnormal symptoms will soon disappear. In addition to the mechanical action of the washing of the stomach and the value of the heat, the nitrate of silver seems to penetrate the duodenum and provoke an activity of the mucous membrane at the orifice of the canal, so that there is a reflex increased secretion of the bile. It also acts as a cholagogue. It should be given in pill form, because it is then less apt to cause a disagreeable metallic taste.

Hemostatic Action of Calcium Chloride.—That diminished coagulability exists in all hemorrhagic diathesis T. SILVESTRI (Gazz. degli Osped., Apr. 13, 1902) considers unquestionable; hence the use of calcium in hemorrhage, whether primary or secondary, would seem a most rational measure. Silvestri has had good results from calcium hypophosphite by mouth and rectum; but

in view of the necessity for more rapid introduction of the drug into the system in emergency cases, he has recently essayed its endovenous injection, with very satisfactory results, from 100 to 150 c.c. of a one-per-cent. sterilized solution of calcium chloride being injected in the median basilic vein in four cases for the control of hemorrhage of the uterus, rectum, nose, and lungs.

Phototherapy in Neurasthenia.—After reviewing the various measures used for the relief of this condition P. JOIRE (Le Nord Médical, Apr. 15, 1902) calls attention to the advantages of phototherapy in nervous conditions as observed in his personal experience. He maintains that, the vibrations of the red rays being slower than those of other rays of the solar spectrum, they have a sedative effect upon the nervous system and are especially adapted to conditions of hyperesthesia such as exist in the neurasthenic, giving rise to the various neuralgias of such patients. Circulatory disturbances depending for the most part upon the vaso-motor nerves are modified by the trophic influence of light, especially of the red rays. Finally, exposure to light rays relieves the general depression by increasing appetite and digestion and improving the general nutrition.

Solanum Carolinense in Epilepsy.—From a series of clinical and pharmaceutical investigations on the value of this drug in epileptic conditions, M. C. THRUSH (Phil. Med. Jour., May 3, 1902) submits the following conclusions: It is of greatest value in grand mal of idiopathic type without hereditary taint and when the disease has begun beyond the age of childhood. It is next of greatest value in hystero-epilepsy with marked convulsive seizures. In cases of petit mal the effect is less marked than in the major type. In well-advanced epilepsy of any type in which there is degeneration of the cerebral neuron, the drug will act specifically for a time, even better than the bromides, but it will finally be determined that the bromide salts will ultimately control the attacks better in these cases. There is sufficient clinical evidence to warrant the statement that the inherent advantages of vegetable depressomotors is great as compared with any mineral salts given with the same intent, since the destruction of the blood-corpuscles by the latter is a most detrimental feature in that it lessens the resistance of the individual in a disease in which, above all, the constitutional tonicity should be favored as ideal treatment. A thorough impregnation of the nerve-cells can be had only in proportion as solanum is pushed to the fullest physiological dosage and maintained for periods of months or a year. The fluid extract freshly made is the best preparation, given in ascending doses from one dram till the full constitutional effect is reached. No toxic symptoms result and the mental faculties are not impaired by its use.

Treatment of Gastric Ulcer.—A number of suggestions in the treatment of this condition are contributed by C. PARISER (Deut. med. Woch., Apr. 17, 1902). The administration of large doses of bismuth through a stomach-tube has been successfully employed in a large number of cases, but as the method is somewhat inconvenient and troublesome, the author proposes doing away with the tube. He merely gives from 3 to 5 drams in water every morning on an empty stomach and keeps the patient quietly in bed for an hour before giving breakfast. As a substitute for the bismuth, he also gives a mixture of equal parts of pulverized chalk and talcum to which from 1 to 3 drams of calcined magnesia are added. For this he claims that, as it does not discolor the stools, the presence of blood in them may be readily detected. The administration should be continued for three weeks or longer, morning and evening, but always on an empty stomach. If diarrhea oc-

cur the magnesia may be omitted for a time. Rest in bed for a period of several weeks or until all signs have disappeared is strongly recommended. A good diagnostic sign is the presence of a dorsal point of tenderness between the tenth and twelfth intercostal spaces, usually to the left of the column. As 95 per cent. of the cases present an ulcer of the posterior wall, the absence of this sign is comparatively infrequent. As long as it can be elicited, rest in bed must be continued. For a diet the author recommends giving milk in various ways, but never raw. Barley, tapioca, and gruels may be added, also an occasional egg in weak bouillon. Nuttose, a casein preparation, is of value. All meat is withheld until pain has almost disappeared; boiled white meat of chicken may first be given, the others not until very much later and then always chopped or scraped. When vomiting is present, rectal alimentation is substituted. At first weak gruels in small quantities with red wine may be injected, followed in several days by more substantial enemata.

Antiseptic Medication of the Genito-urinary Tract.

—A great impetus has recently been given to the study of internal antiseptics in cystitis. Roving made a careful study, with bacteriological examinations, of 29 cases of this disease and came to the conclusion that in 17 of them the cystitis had been produced by catheterization with a sterile instrument. Notwithstanding the most perfect prophylaxis, the urethral flora is almost invariably carried upward by the catheter and infects that very susceptible organ, the bladder. The indication is, of course, to avoid the use of the instrument, especially as a means of irrigation in already existing cystitides, and to substitute the antiseptic drugs. A very thorough and detailed research into the action of eight of the most important of the so-called urinary antiseptics has been made recently by WANNIER (Centralbl. f. d. Krankh. d. Harn- und Sex.-Org., Nov., 1901), which affords a reliable basis for this mode of treatment. Boric acid, a drug of ancient repute, was first experimented with. The author found that bacteria would grow just as freely in the urine of individuals who had received the drug, even in large quantities, as in unmedicated urines. The growth of the various micro-organisms was not even delayed. Benzoic acid, which *in vitro* acts as a fairly efficient antiseptic, proved unsatisfactory. Small doses were without any effect, while larger doses (3.0 or 6.0 p. die) inhibited the growth of only one of the common agents in cystitis, namely *S. pyogenes*, while the others were unaffected. Salol, composed of carbolic and salicylic acid, was of somewhat greater value. It had marked bactericidal properties with certain of the alkalinizing species, but failed completely to influence the growth of *B. coli* and typhi, and *S. aureus*. The first-named micro-organism is well known to be one of the commonest of the pathogenic forms in bladder inflammations. Guaiacol and creosote failed to exercise any effect upon the bacteria inoculated. Of all the drugs experimented with, urotropin and its allies, tannopin and tannoform, alone justified their claim to the title of antiseptics. Urotropin is a condensation product of ammonia and formaldehyde. After its administration, urotropin and formaldehyde are almost always to be found in the urine, occasionally also in the blood. The more acid the urine, the greater amount of formaldehyde does it contain. The action of the drug consists in almost absolutely inhibiting the growth of bacteria. *B. coli* exhibits a very sluggish vitality, however. The micro-organisms seem to be at first depressed in their proliferative function and finally perish. Tannoform, a compound of formaldehyde with tannin, and tannopin, composed of urotropin and tannin, failed to affect the growth of bacteria in the urine.

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BRONCHIECTASIS AND LUNG SURGERY.

At the April meeting of the Harvard Medical Society of New York City (see MEDICAL NEWS, page 1002) Dr. Putnam reported a case of dilatation of the bronchi, with some of the most annoying symptoms of that affection, which was relieved by drainage of several cavities after puncture with the Paquelin cautery. It is well known how hopelessly obstinate to all medical treatment are these extremely offensive conditions. The inhalations of the various deodorant remedies seldom succeed in favorably affecting the fetid odor of the secretion in these cases. This often makes the life of the patient so miserable as to be almost unbearable and he sometimes proves so offensive even to near and dear friends that they are unable to continue in intimate association with the sufferer for any length of time.

Dr. Putnam's case represents one of the very few successful operations for this condition that have been reported. The result is almost unique in the completeness with which the patient's symptoms were relieved. Only those cavities were evacuated by means of the cautery in which fetid secretion was actually demonstrated to be present by means of the exploring needle. Other bronchiectatic dilatations remain in various por-

tions of the lung and may easily be demonstrated by ordinary methods of physical diagnosis. The drainage of the very fetid secretion has made the expectoration entirely inoffensive and the patient no longer vomits as before, but has gained in weight. The disposition even has altered.

It is clear that operative intervention for lung complications is to constitute one of the features of the surgery of the near future. The method employed by Dr. Putnam of using a cautery at a dull red heat requires considerable time for the performance of the operation, but saves time and trouble in the end by avoiding all alarming hemorrhage. There seems no doubt that other, even tuberculous, cavities in the lung may, under favorable circumstances, be treated in this same way with excellent hope of equally satisfactory results. The interior of the thorax has been supposed to be a *noli me tangere* for surgeons. It would seem, however, from Dr. Putnam's experience that only ordinary antiseptic precautions are necessary and that the fear of subsequent pathological conditions in the lung because of irritation of the sensitive bronchial mucous membrane need not deter the surgeon from operating in serious cases when the hope of improvement from medical measures is evidently at an end.

THE VON LEYDEN FESTSCHRIFT.

THE VON LEYDEN FESTSCHRIFT, the memorial volume issued in honor of the seventieth birthday of the great Berlin clinician, is just ready for distribution and an advance copy has come to hand. The volume contains nearly one hundred articles from pupils, former assistants, distinguished colleagues in German Universities and foreign medical friends and admirers. Scarcely a single great university on the Continent is without a noteworthy representative among the contributors to these volumes. The first volume has for authors more distinguished medical men than any other volume of like size, unless, perhaps, the proceedings of an International Medical Congress.

Most of the contributions are distinctly clinical in substance and treatment. Some of them contain very recent advances in practical medicine. Of the foreign contributions only two are in English, but both of these are of notable interest. Sir William Broadbent writes on Chemical and Physiological Constitution and Therapeutical Action. He discusses the complex problems involved in this subject, which has been attracting so much attention during recent years. For

him "a noteworthy illustration of specific affinity between a given metallic base and a certain organic compound is the predominance of the salts of sodium in the liquor sanguinis, while in the red corpuscles floating in this liquor sanguinis salts of potash predominate. Sodium salts combine with albumin, potash salts with globulin." He also touches on the obscure question of the therapeutics of iron. Closely allied to iron in all chemical properties are manganese, nickel and cobalt. "When these metals are given to anemic patients, the progress of the case is always much the same as if iron had been taken. The beneficial effects of iron are usually explained as being due to the supply of this metal to the blood, in which a deficiency of it exists, much as if it were food. The explanation, however, of its efficacy is not quite so simple." The other English contribution is from Dr. S. A. Knopf of New York and is entitled "A Few Thoughts on the Medical and Social Aspect of Tuberculosis at the Beginning of the Twentieth Century." Almost needless to say, this article represents some of the most advanced thought on this important subject.

The French contributions to the *Festschrift* are especially worthy of note for their clinical value and practical significance. Professor Bouchard of Paris discusses the important question of the tendency of arteries and veins to rupture during the course of cirrhosis of the liver. This vascular degeneration is not limited to the portal system, but may occur anywhere throughout the body and so give rise to epistaxis, hematemesis and to the purpuric spots that are often seen in these cases. These vascular changes may be of diagnostic significance. Professor Bourget of Lausanne has a contribution on the elimination of the alkaline chlorides in fibrinous pneumonia, a subject that has recently attracted much attention because of its prognostic significance. Professor Courmont of Lyons announces that early differentiation of many of the febrile infective diseases, including even smallpox and measles and perhaps chickenpox, may be made by means of the leucocyte formula of the blood. Professor Marie has a very interesting article on the delayed occurrence of scoliosis in infantile spinal palsy. Professor Metchnikoff of Paris has a very curiously interesting set of annotations on appendicitis, the predisposition to inflammation of that organ being due to some degree at least, according to his theory, on the injuries of the mucosa of the appendix produced by intestinal parasites in the very young.

The second volume of the work contains a series of articles by former pupils of Professor von Leyden. The list contains the names of many widely-known investigators of clinical aspects of medicine. Among them are Professor Eichhorst of Zurich, Jaffe of Königsberg, Scheuerlen of Stuttgart, Wassermann of Munich, Binswanger of Constance, Brieger, Goldscheider, Klemperer, Bernhardt, Salkowski, Wohlgemuth and Lazarus of Berlin. The two volumes constitute a magnificent and deserved tribute to perhaps the greatest clinician of our generation. The custom of publishing a *Festschrift* on these occasions is distinctly German, though it is being very happily imitated in this country and it is a custom that deserves to spread beyond its fatherland. Such a work provides an excellent opportunity for that grateful homage that the medical profession feels it owes, yet has so few chances to render, to its successful investigators. The Von Leyden *Festschrift* undoubtedly represents the very acme of excellence in the fulfilment of the old custom and will surely prove an incitement to other expressions of gratitude of a similar kind in the case of our great original workers.

SOME BOARDS OF HEALTH

WITH the further development of the highly scientific art of preventive medicine, boards of health are becoming more and more important institutions in our recent civilization. Ten years from now it is probable that these official bodies will get from the public more credit than they now receive, but it is open to debate whether their possibilities and especially their responsibilities are duly appreciated at present by the average American community, particularly by the smaller cities, places, that is, with populations of from five to fifty thousand. At any rate, one may observe in many such towns frequent wasted opportunities such as years ago had more excuse than they seem to have to-day.

Without engaging deeply in the difficult and ancient problem as to whether the old practitioner with much experience and little recent information or the young graduate with little experience and much recent information be the safer sort of a person with whom to trust the prophylactic and therapeutic care of a town, it does seem probable that the average community of the approximate size mentioned is nowadays somewhat apt to place on its health board men of immature fitness and of often relatively restricted purpose. If they have in mind the outline of a modern system of

municipal hygiene, still the details all are lacking, for experience has not furnished them. This is especially likely to be true in places where a "city physician" is employed, who is at the same time apt to be chairman of the health board and upon whom consequently the greater burden of the whole matter is inclined to rest. He alone usually feels any responsibility or draws any pay, and he alone therefore in all except emergencies is apt to be *de facto* the board of health. This factotum is usually a young man, often a very young man, some promising recent graduate, well known in town as "strenuous" and keen, perhaps the son of the oldest, richest, and most influential physician of the place, and who is thus honored largely for his father's sake. On this basis, or perhaps because he has already had the experience, or refused to have it, or was defeated trying to have it when younger, the successful middle-aged physician is not apt to contest the appointment or election of the newcomer, even although the signatures on the diploma or license of the candidate may be still undried. So the city physician and chairman of the board of health starts in unmolested and unadvised, determined, as were his numerous predecessors, to gain in experience and reputation what in the way of salary is by ancient custom denied him.

The question is, Is such an incumbent, on the average, east and west and up and down the land, a suitable person for so responsible a place? Should not men more suitable and technically better fitted for these positions be found and hired at an adequate salary, or if not findable at present, possibly, in sufficient numbers and at reasonable prices, should not they be provided by the proper institutions equipped for this immensely important work? The sins of commission of such a medical officer are not, to be sure, likely to be large, but it is certain that his sins of omission are apt to be larger and much more far-reaching than is dreamed of by the taxpayer who is master of a household of women and children, by the maiden lady, by the man-about-town, by the young man in the shop, or than is dreamed of especially by the politician by whose limited grace the position in question perhaps was filled. The average taxpayer in the average small city cannot, of necessity, know what things the president of a health board who is at once learned, energetic, and widely experienced could do for him and his fellow townsmen, had he the chance. The taxpayers have had no experience in such matters—not at home for there they have as yet had no place, nor in the relative metropolis, for even

if frequent visitors there, they casually see little of those great things which the competent health board year by year and day by day brings about, nor learn the rules which so well bind the resident of the great city and make him live well, theoretically at least. The average citizen of the nation does not, in general, even appreciate the difference between the healthful and the unhealthful town, although in specific cases he may feel when there is no need the pain arising, in consequence of its unhealthfulness, in the bottom of his mourning soul. The average citizen has no criterion by which to judge whether the town he lives in and helps, perhaps, to support, is up to date or five or ten or twenty years behind the sanitary times. The most vital interests of the population of a place are thus apt to rest in hands not correspondingly responsible. The board of health may "do its best for the people," but this best may be not good enough; and the people do not know whether it is good enough or not.

The members of the medical profession at large do know these things, do realize that oftentimes by ignorance, by neglect, or by inadequate assistance or superintendence, the town is failing to receive that which a thoroughly modern and energetic health board of proper experience should provide. The physicians know whether the death-rate of a place declines steadily, as it should in these modern days, how well or ill the school-children are protected from manifold danger, how well the vaccination is carried out, what the quality of the antitoxin, how the mosquitoes fare, how the slums look, how often the summer's garbage is collected, what relative chance the tenement baby has to live. No one else than the physician or the medical man knows these things, no one else, practically speaking, can know them. It is to the physician that belongs the high privilege of teaching the public, and thereby of sustaining and still further elevating the profession of medicine to its proper place above all purpose of mere money-getting or influence-getting into its proper duty of protecting man's greatest blessing and richest capital, health.

To the medical men and women of a community belongs unmistakably the real responsibility of seeing to it that that place has a board of health which represents the talent and energy adequate in securing for the greatest number the greatest amount of hygienic good. The possible amount of this to-day far outweighs in value all those considerations which usually restrict the possible services of medical officers in any community, yet the chief of these considerations are only money and a

knowledge of how to use it productively for the intended purpose. The former of these no community values deliberately in comparison with its health; the latter of these the medical profession should supply.

What is requisite here (as is the case with vaccination, animal experimentation, and other strenuous themes) is public enlightenment, accurate information spread widely, among the people, so that they can neither thus deceive themselves nor be deceived by others. More than almost anything else the public needs medical information of the right sort. This information it is the privilege, as well as the duty, of the physician continually and abundantly to supply.

PINGPONGITIS.

AND now come our English cousins with a new disease—"ping-pong ankle," an account of which has just been published in the *British Medical Journal*. It is evidently a trouble that is known by its play rather than by its works, and in its etiology seems to be a companion to tennis elbow, golf chest, and "Charley horse," or the stiffened arm of the baseball player. Technically, it is a tenosynovitis, an acute inflammation of the sheaths of the tendons of the flexor and extensor muscles of the leg and foot; it is accompanied by much pain and swelling of the ankle, but yields readily to rest and antiphlogistic treatment. The foreign journals are full of hints and advice in regard to a proper costume and suitable footgear, but, fad though it be, and prone as we Americans are "to dress the part" in our sports and fashions, we hardly think that they will be generally adopted. Roses do not grow without thorns, and, universal as the game has been for the past year or more, the list of published casualties is as yet small.

ECHOES AND NEWS.

NEW YORK.

Plans for the Skene Sanitarium.—Mrs. Henry K. Sheldon has given \$1,000 for the endowment of a bed in the Skene Sanitarium in Brooklyn in memory of her husband. Mrs. A. J. Skene is soon to transfer the sanitarium to Miss Mary Fisher as a home for aged and needy professional workers. There is a movement to liquidate the \$35,000 mortgage on the property.

Honors to Dr. Rose.—Dr. Achilles Rose of this city has been made an honorary member of the Society Danaos of Argos, Greece.

Dedication of Hospital for Poor.—The Beth Israel Hospital Association will dedicate its building at Jefferson and Cherry Streets, in the center of the tenement district, on the 25th of this month. The

new hospital will provide accommodations for about 125 patients, which will, in a measure, supply the needs of the sick poor, without regard to race or creed, in the lower part of the city. The cost of the hospital, including the furnishings, will be about \$225,000. Of this amount, the sum of \$106,000 has generously been contributed. In order to place the management of the hospital upon a sound basis, and free from financial embarrassment, the institution hopes to receive the support of the charitable public.

Needs of Maternity Hospital.—Not all people understand that J. Pierpont Morgan, who recently erected the new maternity hospital on Stuyvesant Square, did not endow it. He built the building at a cost of about \$1,600,000, and gave it to the Society of the Lying-in Hospital, believing that the public should support it. The fund of the society is by no means adequate to meet the obligation. Its present income from investments is a little over \$13,000 a year. It receives from the city an amount limited to \$12,000 a year, and it may reasonably expect, from students' fees and other sources, about \$5,000 a year, making a maximum total of \$30,000 a year. It is estimated that with one-third of the hospital building in use, the expense of operation and maintenance will be about \$90,000 a year. This will leave a deficit of about \$60,000 a year, for which the society must depend upon the public.

American Laryngological, Rhinological and Otolological Society.—There are errors in the program of the American Laryngological, Rhinological and Otolological Society. The following corrections on the third page should be made: Eastern Section, H. Holbrook Curtis, M.D.; Middle Section, H. W. Loeb, M.D.; Southern Section, Chas. F. McGahan, M.D.; Western Section, E. W. Fleming, M.D. The following papers have been omitted: "Case of Thyroid Tumor in Interior of the Larynx," by Walter A. Wells, M.D., Washington, D.C.; "Report of a Case in which Laryngeal Symptoms Complicated Purpura Hemorrhagica," by Jos. T. Gibb, M.D., Philadelphia, Pa.

Alumni Association St. Luke's Hospital.—At a meeting of the Alumni Association of St. Luke's Hospital, held Friday, April 11, 1902, the following officers were elected for the ensuing year: President, J. Arthur Booth; Vice-President, William H. Sherman; Treasurer, J. Bentley Squier; Secretary, W. Scott Schley.

Manhattan Dermatological Society.—The last regular meeting of this society was held Friday, May 2, 1902, at the residence of the presiding officer, Dr. Wm. S. Gottheil. Dr. R. Abrahams presented a woman, thirty-five years of age, showing circular, slightly elevated patches, with scaling, on the extensor surfaces of both hands; the forehead, face, chest, thighs and knees became subsequently involved. The eruption resembles a psoriasis in many respects; Dr. Abrahams also thought of eczema seborrhœicum, parasitic eczema and possibly a syphiloderm; he favors the diagnosis of eczema seborrhœicum.

Dr. Kinch said it looked like a psoriasis, but not a typical one; some patches looked like parasitic eczema.

Dr. Pisko calls it psoriasis.

Dr. Oberndorfer said the main element was psoriasis; but many patches were covered with greasy friable scales as seen in eczema seborrhœicum.

Dr. Franklin agreed with the last speaker, and further remarked that the microscope would not shed much light on the diagnosis, since histologically the conditions were about the same.

Dr. Bleiman said the differentiation between eczema seborrhœicum and psoriasis is often quite difficult; cases of apparent eczema seborrhœicum often develop into cases of typical psoriasis; and psoriatic cases after treatment look like eczema seborrhœicum.

Dr. Gottheil makes little distinction between the two; he calls this case psoriasis with a marked seborrheic element present.

Dr. R. Abrahams also presented a case of ulcerating gumma, situated over the right trochanter. The patient, a female, about twenty-eight years of age, denies all knowledge of original infection; no history elicited; the ulcer was typical, deeply excavated, and about the size of a fifty-cent piece; no other lesion present.

Dr. Edward Pisko presents a typical case of lupus erythematosus, involving the left malar region and scalp; on the face the picture was typical; the scalp, however, shows the result of a long-standing process and the resultant scar-tissue was considered typical; the case is under treatment with 20-per-cent. resorcin ointment locally and iodoform internally. Dr. Pisko also showed a case of total alopecia; the usual hairy sites were absolutely hairless; the head was completely bald; the process began about one and one-half years ago as an alopecia areata and gradually extended. Lues and acute infectious diseases could be excluded.

Dr. L. Weiss presented a case for diagnosis; an elderly woman with an eruption confined to the nose and adjacent upper lip; the process began three years ago with redness, hard, acne-like nodules about the body of nose; at present, small areas of scar tissue can be seen; there is marked redness, some infiltration and ulceration with scaling; the lip shows redness and desquamation only. Dr. Weiss spoke of the differential diagnosis between acne rosacea, rhinophyma, rhinoscleroma and lupus erythematosus. He regards it as lupus, most likely.

Drs. Franklin, Geyser and Kinch called it lupus. Dr. Bleiman spoke in favor of acne rosacea; Dr. Oberndorfer called it acne rosacea hypertrophica. Dr. Abrahams based his diagnosis of lupus upon the scarification and presence of tubercles. Dr. Gottheil believed the condition to be lupus; Dr. Pisko said the rosacea present was but an early process of a lupus erythematosus and believed this case would so eventually develop.

Dr. L. Weiss presented a child showing spindle-shaped swellings involving the right index metacarpal bone and left thumb proximal phalanx; the skin is quite red and ulcerated; the tumors are hard and a little painful; the child is well nourished; there is no history of previous swellings, ulcerations or eruptive lesions; a radiograph of the case shows involvement of bone and joints. Dr. Weiss regards it as tuberculous rather than specific. Dr. Geyser said the radiograph shows the nature of the process to be tuberculous. Dr. Pisko calls it tuberculous spina ventosa. Drs. Oberndorfer and Bleiman consider it tuberculous; Dr. Abrahams said he saw a case resembling this one which did well only when put on antisypilitic treatment; he was not so sure that this might not be specific.

Dr. W. S. Gottheil presented a case of seborrhoea oleosa involving the face; a marked exfoliation of mucosa of the upper lip was also present; in addition a chronic gingivitis. Dr. Gottheil believes the lip condition to be independent of the seborrhoea oleosa or the gingivitis; since no sebaceous glands are present in the lip he asks whether this could be a true seborrhoea; cases of exfoliation of lip are extremely rare, but he considers this case as such; present case of very long standing. Dr. Pisko said the process on the face and gums had no connection with the lip; the latter he considers a beginning epithelioma.

Dr. L. Weiss agrees with Dr. Gottheil, arriving at such a diagnosis by exclusion; seborrhoea exfoliativa labialis, he said, is very rare. Dr. Abrahams coincides with the latter speaker; he thought the gingivitis might be due to plumbism.

Dr. R. Abrahams presented a case showing glandular

enlargement of the submaxillary and cervical glands; he thought it to be a case of beginning Hodgkin's disease; he regrets that he could not prepare a blood specimen for examination, but will report at a later date.

Dr. L. Weiss showed the following case; eruption of hard, somewhat flattened papules, single and in groups with scaling, on a highly-inflamed skin, covering both forearms, extensor surfaces; present about six weeks. Dr. Weiss wavered in his diagnosis between an acute lichen and an erythema multiformis, favoring the latter.

Drs. Pisko, Gottheil and Kinch consider it lichen planus; the hyperemia present is often observed in acute cases.

Dr. I. P. Oberndorfer also showed a typical case of lichen planus confined to left forearm and the neck; present about nine weeks; he said he would try the biniodide treatment of Dr. Lusk and report result.

Dr. W. S. Gottheil presented a man, forty-one years of age, showing an area of redness over the right malar bone, about the size of a dollar piece; began three months ago as a papule; the patch is slightly infiltrated, the center pale and the red edges gradually fading into the normal skin; Dr. Gottheil was in doubt whether to call it lupus erythematosus or the condition described as erythema induratum. Dr. L. Weiss saw no distinct erythema, seborrhoea or folliculitis, and would not call it lupus; suggestion of Dr. Gottheil well taken. Dr. Pisko thinks it is a beginning lupus.

Dr. Abrahams said that a circumscribed patch, depressed in center, with a tendency to atrophy, as here shown, suggests to him the diagnosis of morphea.

Dr. Edward Pisko showed a case presenting an eruption, of seven years' duration, upon the ankle and on left hand; there is redness and scaling and it is crescentic in outline; he called it tuberculosis cutis; treatment of no avail. In the discussion the diagnosis of parasitic eczema of long standing, probably untreated, was made by the majority of the members.

Dr. Geyser presented a young man who shows edematous infiltration of the right leg; process of seven years' standing; at present the leg is nearly normal in size; at one time it was twice its normal dimensions; the case had been diagnosed by another observer as "elephantiasis." The right scrotum shows marked edema; the skin structure is unaltered.

Drs. Abraham and Kinch see no alteration in skin structure and regard the edema as lymphatic in origin from obscure cause. Dr. Weiss called the condition lymphodermia. Dr. Gottheil spoke of the relation of lymphatic stasis and a beginning elephantiasis. Massage was suggested.

Complimentary Dinner to Surgeon-General Sternberg.—A dinner will be tendered to Dr. Sternberg in New York, June 13th, under the auspices of the following representative committee: Drs. Henry D. Holton, Frank Billings, Simon Flexner, A. C. Abbott, James Tyson, J. C. Wilson, W. H. Welch, G. M. Kober, S. B. Ward, R. H. Fitz, F. C. Shattuck, Maurice Richardson, Harold C. Ernst, Victor C. Vaughan, Surgeon-General Rixey, H. M. Hurd, Roswell Park, Lewis S. Pilcher, John A. Wyeth, Abraham Jacobi, Edward G. Janeway, Hermann M. Biggs, Surgeon-General Wyman, William Osler, Chas. G. Stockton and Lewis A. Stimson.

The New St. Bartholomew's Clinic.—The new building for St. Bartholomew's Clinic at 215-217 East 42d Street, which was opened for inspection May 21st, presents many new forms of construction and interior detail which are distinct advances over the usual methods in use generally or even in the more modern buildings of kindred institutions. When the work was originally contemplated it was desired to produce a building which, so far as money could provide and ingenuity invent, would be better than anything heretofore

erected and a model in all respects of what a structure for the treatment of medical and surgical cases should be, and the work now completed shows the best type of hospital construction that can be produced under present conditions.

PHILADELPHIA.

Death of Major Brooke.—Major John Brooke, a retired army surgeon, died suddenly from cerebral hemorrhage at his home in Radnor, May 12th, aged seventy-two years.

Medical School Commencements.—The commencement of the Woman's Medical College was held May 21st; that of the Medico-Chirurgical College on May 23rd. Jefferson holds its exercises on May 29th.

Medico-Chirurgical College.—Dr. E. R. Kirby has retired from the chair of genito-urinary surgery.

Site for Almshouse.—The Petty's Island scheme is again being revived in connection with the proposed removal of the Almshouse and Hospital for the Insane. This site has been under discussion for some years and has been the subject of heated arguments. Superintendent Geary is quoted as saying: "Petty's Island is the most desirable place for the new Almshouse and Hospital for the Insane, because it has many advantages. In the first place, it is the nearest point that can be reached from all parts of the city; and, secondly, because of its location in the middle of the river, thereby practically isolating it from the city except by ferry. The location also gives it the best opportunity for sanitary draining. If located on Petty's Island, the institution would never be encroached upon or hemmed in by other buildings, thereby reducing its area by others taking its real estate. Less than one-half of the tract would be required at the present time for buildings, and the balance could be utilized for giving employment to such patients as need it."

Site Selected for Municipal Hospital.—A tract of land containing 62 acres on the line between Philadelphia and Montgomery Counties has been decided upon as the new site for the Municipal Hospital. The new site is seven miles from the City Hall, more than twice as far as the present institution. The site will cost \$115,000.

American Orthopedic Association.—A cordial invitation is extended to the medical profession to attend the meetings of the American Orthopedic Association to be held on the tenth floor of the Hotel Walton, Broad and Locust Streets, Philadelphia, on June 5, 6 and 7, 1902. An evening with the Plaster-of-Paris Bandage will be held in the Amphitheater of the Jefferson Hospital, 1020 Sansom Street, on June 5th at 8 p.m., of which the following is the program: Reginald H. Sayre, New York, will demonstrate the method of upright suspension in the application of spinal jackets, and exhibit a rotary plaster saw. R. Tunstall Taylor, Baltimore, will demonstrate the upright and small recumbent kyphotones. John Ridlon of Chicago will exhibit knives for cutting plaster. Harry M. Sherman of San Francisco will exhibit a saw and separator and plaster-of-Paris splints for club-feet to demonstrate a method of anchorage. Robert M. Lovett of Boston will exhibit a frame for the application of plaster jackets, with description of a method of application. Also some bandages and a practical bandage roller invented by Dr. S. Robinson. Louis A. Weigel of Rochester will exhibit a removable plaster jacket and materials for making the same. H. P. H. Galloway of Toronto will exhibit a very simple machine for making plaster bandages. A. J. Steele of St. Louis will explain the advantages of wire gauze in connection with plaster bandages, and will exhibit a saw and skin protector. James K. Young of Philadelphia will demonstrate a method of

applying plaster jackets in recumbency. H. Augustus Wilson will exhibit a portable door-extension apparatus for applying plaster jackets; also an apparatus for making plaster bandages; also a circular saw and Reed's cutter.

CHICAGO.

Health Department Weekly Bulletin.—There were seventy-eight fewer deaths last week than the week before and the total, 471, is the lowest in twenty-one weeks. The reduction represents a decrease of 13.2 per cent. in the annual death rate. The principal reduction has been in the age period under five years, a reduction which has been continuous for the last three weeks. Coincident with this has been a steadily improving quality of the milk supply. Of the total 574 samples of milk and cream examined last week in the laboratory only twenty-four, or 4.1 per cent., were found below grade. This establishes a new record in the Milk Division.

Too much untreated hydrant water is still being drunk, notwithstanding the daily bulletins of the Department showing the quality of the lake water. The frequent rains of the last few weeks have produced the usual pollution and eleven deaths from typhoid fever were reported during the week. Deducting two of these, which were contracted elsewhere, the remaining nine typhoid deaths are a wholly unnecessary sacrifice to ignorance or criminal negligence. Boil all hydrant water intended for drinking purposes and continue to do so until all sewage is diverted from the lake into the drainage channel.

During the first seventeen days of the month there have been thirty suicides—a tribute to the evil influence of the influenza poison upon the nervous system. Aliens especially and the medical profession generally are at last aroused to the baleful import of this disease, which has been more or less prevalent throughout the world since the fall of 1889. The large increase in the demand for bacterial examinations in the laboratory during the past fortnight was due entirely to influenza, the bacillus of which is found with increasing frequency, while those of diphtheria, pneumonia and the other germ diseases are diminishing. Aside, however, from the continuing prevalence of scarlet fever and an increasing gravity of the smallpox situation, the public health conditions are fairly satisfactory and a further decrease of the mortality-rate is probable.

As to smallpox, ten out of the nineteen new cases discovered last week were among colored people, and since the first of the year this factor of the population, numbering only 1.3 per cent. of the total, has furnished 35 per cent. of all cases. The colored pastors, physicians, lawyers, and other influential leaders of the race, having been made acquainted with these facts, are taking steps to secure general vaccination and to promote sanitation among their people in order that this stigma may be removed. The situation is less hopeful in other respects. An immigration movement of enormous proportions is flooding the northwest with thousands of the newly-arrived who are passed on from ports of arrival into the interior without any supervision as to their vaccinal condition. Chicago, as the great distributing point, is peculiarly exposed and appeals have been made by the Commissioner to the Federal, State and local authorities to enforce proper precautions at ports of entry to the end that no immigrant or his belongings may leave such ports until vaccination and disinfection have made it certain that they shall not be carriers of contagion into the country.

CANADA.

Medical Legislation in the British Columbia Parliament.—One of the members of this body has introduced rather peculiar legislation into the British

Columbia Parliament. Its substance is to permit some members of the medical profession in the rural and mining districts, who have gone thither from other provinces of Canada, to continue in practice without taking the prescribed examinations of the Medical Council. It is not likely that the profession in the Pacific Province will stand for any such measure of relief. What they purpose legislating for, however, is a change in the constitution of the Medical Council, which will provide for a Registrar outside of that body, as in Ontario, one who is not a member of the Council. This is the outcome of the recent Council elections.

Montreal and Compulsory Vaccination.—The Board of Health of the Province of Quebec has power to compel municipalities to pass a compulsory vaccination by-law. The matter was recently before the City Council of Montreal, but it never even reached a second reading. This action of the civic authorities of Montreal is indeed deplorable, when the facts in connection with the outbreak of smallpox in that city are taken into consideration. In the last outbreak, out of 361 patients, only three bore good vaccination marks; 322 of the 361 had never been vaccinated at all; surely this was proof enough of the great value of vaccination. Some three hundred municipalities of the Province of Quebec have adopted the by-law of the provincial Board of Health making vaccination compulsory, but Montreal will have none of it. That city prefers to spend thousands of dollars caring for smallpox patients.

Montreal Dispensary.—At the fifty-second annual meeting of the Montreal Dispensary held last week, the report of the secretary was submitted and showed that for the past year advice and medical treatment had been extended to no less than 16,675 people. Of this number 11,643 were Roman Catholics and 4,004 Protestants. Considered medically, the report showed that of the total number 8,505 were medical and surgical cases; 2,069, eye and ear; 1,725, diseases of women; 912, nose and throat; 1,983, diseases of the skin; 1,327, diseases of children; 154, dentistry. The balance on hand in the treasury amounted to \$3,664.21.

Doyens of Medical Profession in Montreal.—Dr. J. P. Rottot, Dr. D. C. MacCallum and Sir William Hingston, M.D., have been recently highly honored by their professional brethren in Montreal. The first is the Dean of the Laval Medical Faculty; the second, Emeritus Professor in the Faculty of McGill University; the third, Professor of Clinical Surgery at Laval. The occasion was the celebration of their golden jubilee in the ranks of medicine. During the last fifty years only two other celebrations of this character have been held in Montreal. Dr. Rottot had been admitted in 1847, a graduate of the old Montreal Medical College, which afterward became the Victoria, and now is the Medical Faculty of Laval. Dr. MacCallum graduated at McGill in 1850 and for a long time held the chair of obstetrics in that institution. Sir William Hingston graduated from the same institution in 1851 and of late years has filled the chair of clinical surgery at Laval. Sir William has been Mayor of Montreal and is a Canadian Senator.

Insane in Toronto Jail.—According to the report of the special civic committee of the Toronto City Council appointed to investigate the charges made that there were a number of insane people in the Toronto jail who were mixing with criminals, it would appear that the charges have been fully and amply substantiated, as the Committee reports that there are as many as thirty-one insane people housed in that institution in addition to several imbeciles. The report calling upon the provincial authorities to provide proper accommodation for these people has been adopted by the Council, and it is

to be hoped that measures will at once be taken to carry out the recommendations of the report, and that the jails of the Province outside of Toronto will also be soon relieved of this class of inhabitant. There are said to be something like eighty insane people in the different jails of the Province.

Toronto Clinical Society.—This society has closed its work for the 1901-1902 year, which has been one of the most successful in its history. At the final meeting, which was held the first Wednesday in May, Dr. A. J. Harrington reported a very interesting and apparently rare case of membranous glossitis, stating that he could find no trace of such a condition in medical literature. It occurred in a child eleven months old, a fine, robust, healthy child. In March of the present year it suffered from an attack of measles. After a slight injury to the cheek, a membrane developed on the tongue which exfoliated on April 8th, the child at that time being profoundly septic. It died the following morning. Dr. Allan Baines reported a severe metrorrhagia in a young girl, sixteen years of age, following an attack of mumps. Dr. Fred. Fenton reported on the use of urotropin in pyuria with very favorable results. Dr. C. J. O. Hastings reported three cases of myxomatous degeneration of the villi of the chorion, occurring in his own practice. All three patients recovered. The following officers were elected for next year: President, E. E. King; Vice-President, G. R. McDonagh; Corresponding Secretary, W. J. McCollum; Recording Secretary, George Elliott; Executive Committee, J. F. W. Ross, J. Orlando Orr, H. A. Bruce, H. C. Parsons and J. T. Fotheringham; Treasurer, G. Boyd.

GENERAL.

Paludism and Mosquitoes.—The Japanese military authorities have just made an interesting experiment in the island of Formosa. One battalion of soldiers was completely protected against mosquitoes during the malarial season. In 161 days there was not one case of malaria among these soldiers. During the same period and in the same locality there were 259 cases of malaria in another battalion which had not been so protected.

Italian Ophthalmological Congress.—The Sixteenth Congress of the Association of Italian Ophthalmologists will be held in Florence, October 12-16, 1902.

Lepers in the Philippines.—The number of lepers in the Philippine Islands is estimated at about 12,000.

Hospital Appointments.—The Atlantic City Hospital has created a new department of gynecology. Drs. E. Marvel and Wm. Edgar Darnall have been appointed gynecologists.

CORRESPONDENCE.

REPLY TO DR. KNOFF.

To the Editor of the MEDICAL NEWS:

DEAR DOCTOR:—Allow me a few lines in rejoinder to Dr. S. A. Knopf, a man whom we phthisiophobes are anxious to convert, because of his splendid work along various lines of study of tuberculosis.

First of all come two points in etymology. A *phobia* is a fear, not a madness, although in speaking of purely nervous fears, the two words become practically synonymous. Phthisiophobia is no more madness than photophobia. I am afraid of phthisis in the same sense that I am of a broken wire. Even if it be proved that phthisis is absolutely non-contagious or that the wire does not carry electricity of high potential, my fear will not have been irrational and it will have done no harm.

Dr. Knopf states, "The word *contagion* conveys the idea that the disease is transmitted by the mere touch of the afflicted individual." This is true only in the most literal sense of the translator. Diphtheria, measles, scarlet fever, etc., are rarely transmitted by touch, but by emanations from the body. Any disease is contagious which has a living cause, either animal or vegetable, unless the organism (1) be eliminated by certain routes and by no others, so that ordinary association with the patient is perfectly safe; or (2) must pass through intermediate stages of existence before it can again infect the human body; or (3) can gain access to the human body and grow therein only when certain predisposing conditions are present.

To say that tuberculosis or any other disease of considerable severity is not "dangerously communicable" implies either that it is not due to a living organism or that none of the three conditions previously stated are fulfilled. Probably neither Dr. Knopf nor his school disbelieve in the bacillus tuberculosis or claim that it passes through an intermediate, non-infective stage or that it escapes the body by routes that do not admit of ready infection of fomites. Harold Coates (*Therapeutic Monthly*, Jan., 1902) examined the dust from a series of houses, always avoiding sites where direct deposition of sputum could have occurred. Of twenty-three dirty houses, with a careless consumptive, twenty-one yielded infectious dust. Of ten very clean houses, with a careless consumptive, five yielded infectious dust. Of dirty houses, not occupied by consumptives, at least for several years, ten were examined with negative results, an observation that is very significant as supporting the theory of phthisiophobes that prophylaxis of tuberculosis must be mainly directed at actually tuberculous men and animals. It is held by Dr. Knopf and his school that the careful consumptive is not a source of danger. This is true to a relative degree, but no degree of forethought and altruism can prevent sneezing and coughing or drooling and occasional reflex spitting during sleep or the abandonment of all precautions in the final stage.

As I understand the contention that tuberculosis is not a dangerously communicable disease, it rests on the empiric evidence that healthy bodies are not especially favorable to the development of tuberculous bacilli and is fallaciously supported by the fact that the slowness of the disease renders it impossible to point out the precise moment and place of infection. Now, while the contagiousness of tuberculosis is not marked for a casual visitor in good general health, the fact that 10 or 11 per cent. of our population die of tuberculosis is a serious matter, and we phthisiophobes regard the existing cases as the cause of the future ones. From a purely sanitary standpoint, the most effective prophylaxis would be the condemnation of all tuberculous animals, human or otherwise, and the thorough disinfection of all fomites. We hold that it is not unreasonable to exclude all extraneous cases from the country and that the segregation of all cases with discharge of bacilli is the only radical means of vanquishing the disease. As to the economic question in regard to immigrants, it is beyond my power to calculate how much money a person should have to offset the actual damage which he will involve, if tuberculous. Very few immigrants are paupers and, on the other hand, there are very few who are not dangerously near public charity if they can not or will not work. All institutional statistics show this and they would show it to a greater degree if the services of city physicians, dispensaries and hospitals were included. But the real issue is sanitary, not economic.

A. L. BENEDICT, M.D.

Buffalo, N. Y., May 4, 1902.

A BRIEF PRELIMINARY REPORT ON THE USE OF UREA AT ST. JOSEPH'S SANATORIUM.

To the Editor of the MEDICAL NEWS:

DEAR SIR: Following instructions received from a majority of the Advisory Board, the use of pure synthetic urea in pulmonary tuberculosis was begun several months ago. In about 25 per cent. of all cases in which it has been administered, there has been a very marked increase in the amount of urine excreted, forcing the patient to urinate frequently and often, on this account disturbing sleep. The diuresis is not accompanied by an increase in the urinary solids. In those cases in which the use of urea is followed by diuresis, pain in the back, over the kidneys, is a constant symptom, which is at once relieved by discontinuing the use of the remedy. Digestive disturbance, as a result of the administration of this agent has not been noted, contrary to the experience of Harper (*Brit. M. Jour.*, Jan., 1902). The dose employed is fifteen grains, three times daily, increased to thirty grains, three times daily, if diuresis does not occur. This symptom has usually followed doses of thirty grains, three times daily. The remedy has at once been discontinued in every case in which symptoms fairly attributable to it have occurred, provided a diminution in the quantity administered does not relieve the symptoms.

As regards the supposed antituberculous effect of urea, I have at present nothing to offer. It is so usual for patients to improve under proper management in our climate that at best it is difficult to know just what to attribute to the action of any drug employed. I can, however, say positively that a result of the use of urea sufficiently striking to attract my attention has not occurred.

E. S. BULLOCK, M.D.

Silver City, New Mexico, May 12, 1902.

FOREIGN SOCIETIES.

French.

HUMAN ACTINOMYCOSIS IN FRANCE—CHLOROFORMIZATION—POLYMICROBIC NON-SUPPURATIVE OSTEOMYELITIS—ANEURISMS OF THE ARCH OF THE AORTA—HYPERTROPHY OF THE PROSTATE—ON THE CASE OF THE HINDOO XIPHOPAGUS "RADICA-DOODICA."

THE French medical societies in Paris have been engaged in discussing a number of important topics.

A. PONCET, of Lyons, at the Academy of Medicine, April 1, 1902, read a paper on Human Actinomycosis in France, which will be of interest in its bearing on this dreadful disease as it occurs in the human race everywhere. Since his last communication on the subject in 1900, he has collected with the aid of M. L. Berard, twenty-one new cases of the disease, of which some have been published by other authors and some by these two collaborators. The cases concerned localizations in cervical and facial regions in the proportion of eighteen out of the twenty-one cases, which, therefore, appear to be the most common seats of it, probably because the contamination takes place through the mouth. The remaining three cases were respectively one of the thorax and lungs primarily, one in the adnexa of the uterus, and one in the anorectal region. In all these patients the clinical diagnosis was confirmed by finding the parasite in the pus as discharged, or in the scrapings of the sinuses. To these twenty-one cases should be added eight more collected in the last two years by Thiéry, of Paris, which are not included in the above twenty-one patients, because the records have not yet been published. They bring the grand total of observations of human actinomycosis well authenticated up to the present time in France to 146, of which seventy-nine were localizations in the cervico-facial region, and six

ty-seven localizations in the various viscera. The prognosis is a varied one in this disease and has been outlined by M. J. Duvau, a military surgeon, who has been able to collect the records of 257 cases both in France and abroad. From the records he concludes that the mortality is 2 or 3 per cent. in the cutaneous, 10 per cent. in the superficial cervicofacial, 30 per cent. in the temporomaxillary, 65 per cent. in the abdominal secondary to intestinal lesions, 85 per cent. in the thoracopulmonary, and finally 100 per cent. in the hepatic and cerebrospinal localizations. The great gravity of the visceral type of this disease is due, on the one hand, to the secondary infections which almost always occur with the primary disease, and, on the other hand, to the impossibility of applying a curative surgical treatment because of the seriginous character of these lesions and because of their extensive infiltration.

RÉNAUT, of Lyons, contributed a discussion on the subject of chloroformization in the presence of heart disease. He stated that in animals destroyed by chloroform, it is impossible by ordinary means to make out the outline of the epithelial cells in the convoluted tubes of the kidney. He thinks that this fact points to the possibility of a change taking place in these cells. From his experiments he concludes that chloroform begins by making the kidneys less efficient for the proper secretion of the urine, a fact which deserves careful consideration because so many people who may be obliged to take chloroform may already be diseased, or more or less exposed to infection. This will, therefore, be a primary reason for preferring ether to chloroform, because the former gives relatively fewer accidents in the course of its administration. It is advisable in such patients to interrupt the giving of the ether from moment to moment, restoring the drug only when the reflexes begin to appear. By proceeding thus, the author has been able in one case to prolong the narcosis for two hours without the subsequent occurrence of vomiting. In another subject anesthesia carried out under the same conditions permitted the patient to aid more or less by his semi-consciousness throughout the operation. Etherization is equally exempt from all inconvenience in patients afflicted with pronounced myocarditis. Rénaud, therefore, estimates that anesthesia by ether is always harmless and constitutes the method of choice for surgical use.

LANNELONGUE, at the session of March 24, 1902, read a contribution concerning nine cases of a grave form of osteomyelitis, polymicrobial but non-suppurative, which he has had the opportunity of observing during the past few years. In addition to its highly acute invasion, it is characterized by the fact that, when the bone involved is opened, instead of true pus, there escapes blood from which it is possible to isolate staphylococci associated with one or more species of germ. This affection has always a very violent invasion, resembling that of severe rheumatism, with a fever of 40° C., sometimes reaching even 41° C., and varying from morning to night by at least 1° C. The subjective symptoms are chiefly extreme pain in the region of the focus of disease, which can be elicited by pressure methodically applied along the axis of the bone and finally localized by this means. These painful phenomena put the neighboring joint at rest, but as a rule the latter is not diseased. Objectively, in general it is possible to find a small tumor over the region invaded. If a bone of the cranium be diseased, this tumor may progress to the point of closing the eyelids. In the head, as a rule, the frontal or the parietal bone is affected. It is strange that throughout the disease there never appears a true abscess. While these local signs and symptoms are present, the general system shows profound alterations; the face is discolored, there are irregular, widespread

pains, a small, rapid pulse, sometimes a low grade of delirium, and, unless an operation be done, death appears quite soon, due, seemingly, to a generalization of the infection by the formation of multiple abscesses, bronchopneumonia, pyemia, etc. In regard to the localization of this osteomyelitis, in the nine cases four were in the upper extremity of the femur, one in the lower extremity of the same bone, one in the lower extremity of the humerus, and three in the bones of the cranium. In the majority of these subjects, it was possible to discover the point of entrance for the infection, such as corns, scratches, pimples and the like about the feet. The bacteriological examination of the blood gave the following results: Four times the staphylococcus was associated respectively with the streptococcus, the colon bacillus, with both of these, and, finally, with a short bacillus not yet identified. Only active surgical intervention has rendered a cure in these patients at all possible. Locally, it is true, there was no abscess, and sometimes hardly any tumor; nevertheless the operation was sufficiently indicated by the results of the examination of the bone, especially by that which represents the amount of pain present. Repeated, careful exploration of the bone shows at first very moderate pain, which increases and finally becomes excruciating as the level of the focus is approached. At this point the bone should be opened in two places at least; for example, in the femur at the focus and in the great trochanter.

GUINARD, at the Society of Surgery, March 26, 1902, read a paper on the treatment of aneurism of the arch of the aorta, quoting a paper of Tuffier read at a previous session, in which the latter regretted that in operating on such a case he had not removed the pocket, but had simply tied it off. It is certain that simple ligature of the pedicle of a sacculated aneurism is invariably followed by rupture and a flood of hemorrhage, killing almost instantly. On the other hand, so far as a removal of the sac could possibly go, it is certain that this, too, should be proscribed, because nothing would prevent a similar, fatal hemorrhage. Guinard has performed twelve ligations of the common carotid artery and of the right subclavian artery for aneurisms of the ascending part of the aorta, or of the trunk of the brachiocephalic artery, because this operation is as efficacious in one case as in the other, and, moreover, confusion of these two varieties of aneurisms is extremely frequent. Once in perhaps two instances there exists not only an aneurism of the arch, but also an aneurism of its first large branch. In general it may be said that when there is an aneurism at the base of the neck at the right side, a ligature of the right common carotid and of the right subclavian artery is always indicated, and that as a rule it produces the same effects as extirpation without adding any of its gravities.

POTHEBAT read a paper on the question of resection of the vasa deferentia as a means of curing hypertrophy of the prostate, in behalf of CHARRIER, who used it especially in the presence of symptoms of retention. One of the patients, who was in a very critical condition before the operation, died a day or two after it. In two other cases the result was rather satisfactory and the improvement in the urinary troubles appeared at the end of ten or twelve days. The fourth patient received no benefit whatever from the operation. In his opinion these examples seemed to prove that the operation is not at all a certain way of curing this trouble.

DOVEN, at the Academy of Medicine, April 8, 1902, reported the case of the twins, namely, the xiphopagus Radica-Doodica, whom he had separated by operation February 9th, and of whom one, Doodica, had died. He presented the following interesting particulars concerning the pathological and physiological anatomy and operative technic. The two girls were not united by

any trace of supplementary tissue. There was no "membrane of union." The junction was between the xiphoid cartilage and the umbilicus and was such that, in cutting between these two points of the abdominal walls of the two children, it was necessary to expose the two livers, on account of the reduplication of the umbilicus vein, in order to suture one with the other, and thus to reunite the abdominal walls, the diaphragm, the xiphoid cartilages and the skin of each child. The band of union was the result of a drawing-out of the tissues in such a manner that it permitted him to determine that the separation should be made exactly in the middle line. This band showed when the children were in bed in the latero-dorsal position and was from 12 to 14 cm. in height and from 4 to 5 cm. in thickness. Its anterior surface was from 5 to 6 cm. high and its posterior from 10 to 12 cm. Its posterior surface was reduced to a vertical skin mass. If the position of the little girls was changed the bridge of union changed also, so that its anterior face became almost posterior and thus reduced itself to a simple skin line, while the point of tension showed a widening out. The navel of the two children was at the lower margin of this bridge and, when the children were put face to face in contact with each other, appeared like a little round opening. So far as the pathology and physiology of this monstrosity is concerned, no test could be made with methylene blue, in virtue of the symptoms which made it necessary to hasten the operation, because the disease which had attacked Doodica appeared to be threatening Radica. The presence of three large arteries in the bridge of liver tissue in the side of Doodica, and the double fact that Radica had always appeared to develop secondarily to Doodica and was comparatively little affected by the operation, while Doodica was more ill but seemed to be the more resistant, caused him to conclude that Radica received blood in large quantities from Doodica, for which she returned venous blood. Radica showed tuberculosis of the lymphatic glands a long time before Doodica appeared to have tuberculous peritonitis; from which it is concluded that the latter arose from the former by means of the venous blood, or that in reality the disease was acquired by Doodica independently of Radica. On the other hand, she had a temperature before the operation of 39°C ., while that of her sister was $37\frac{1}{2}^{\circ}\text{C}$. This seems to show that the fever in Doodica was due to the local inflammatory condition. The separation of the two children was done as an operation of necessity to save if possible the one which was less afflicted by disease. The least loss of blood might have been fatal. For this reason he applied his method of crushing before cutting through the bridge of liver tissue. Photographs were shown of the body of Doodica before and during the autopsy. The abscess in the pelvis and above the iliac regions which caused death was very apparent. Likewise the lesions caused by tuberculosis of the peritoneal cavity which had followed the fibrous form without exudation; the liver, stomach and heart were in their normal situations. Eight days after the operation, Doodica weighed 12.5 kilograms, while Radica weighed 19 kilograms. At the time of report she weighed 25 kilograms, her tuberculous glands in the neck and armpits had been removed, and recovery was probable. By the X-ray it was possible to show that her heart was in the right position, but that the spinal column was deviated to one side, the curvature probably being due to the faulty position in which the child had to lie while attached to her sister.

Physicians Protective Association.—This western company has now established offices in New York City and for the sum of \$20 a year try all law suits brought against physicians.

SOCIETY PROCEEDINGS.

SOCIETY OF DERMATOLOGY AND GENITO-URINARY SURGERY.

Stated Meeting, Held April 11, 1902.

The President, R. H. Greene, M.D., in the Chair.

Case of Psoriasis.—Dr. Whitehouse presented a patient who had psoriasis of unusual distribution. Previous to the commencement of this trouble, seven or eight months ago, he had never had any skin disease. The lesions were typical of psoriasis but, in addition, the patient had scabies. The lesions were symmetrically localized on the lobe of each ear. Upon the back of the leg there was an irregular distribution like *nævus linearis*; the opposite leg was free from lesions. Upon the glans penis the eruption had the appearance of lichen planus. The speaker considered it a plain case of psoriasis with unusual distribution of the lesions. The patient had been taking rhubarb and soda mixture.

Dr. Levisseur thought that such a localization was due to some coincident condition, such as is often seen in psoriasis. He did not believe that psoriasis ever followed any particular line of nerves.

Dr. Whitehouse said that, so far as localization of the lesion was concerned, the case was atypical. He agreed with Dr. Levisseur that psoriasis did not follow any nerve like *nævus* or *zoster*, but he thought that psoriasis was somewhat related to lichen planus so far as the history and subsequent course were concerned. Lichen planus follows irritation and scratching, the lesions being distributed along the scratch marks. In the case presented there was nothing to account for the eruption along any particular line. The lesion on the glans penis simulated lichen planus; the papules looked very much like it. He said he would place the patient on the Asiatic pill and white precipitate ointment.

Hard Chancere of the Lip.—Dr. Whitehouse presented a case of a characteristic initial lesion of the lower lip. It was of seven or eight weeks' duration and no history could be obtained as to how it was contracted. As yet no general symptoms have developed.

Dr. Lusk said it was advisable to encourage the appearance of general symptoms. He did not like to use any ointment or greasy substances, but preferred blackwash, which was drying and did not necessitate any cotton application or dressing.

Dr. Kingsbury believed it was necessary to begin general treatment at once because, in this situation, the disease was particularly contagious.

Dr. Cocks agreed with the diagnosis and said he would apply a calomel dressing and then place over it a layer of absorbent cotton and pour over it some colloidion. He did not believe one was justified in running the patient down in order to hasten the appearance of the rash; the latter would appear in time.

Dr. Bierhoff had recently seen a case in which there was no doubt that the patient was infected by a glass in a bar-room.

Idiopathic Atrophy of the Skin in Patches.—Dr. Levisseur presented a cast showing this condition. The lesions, eight in number, were of the size of a pin and looked like pits following smallpox. There was no redness nor inflammation. There were absolutely no other lesions to account for the formation of these little depressed scar-like formations. He asked if any present had seen a like condition.

Dr. Lusk said that he had seen lesions of that nature following *ecthyma* in children of strumous habits. He believed that an infected lesion of that nature occurring in children poorly nourished would be followed by a scar of that kind.

Dr. Leviser said there was no lesion of any kind preceding this condition; of that he was positive. They developed idiopathically, being the primary affection. It was very similar in appearance to the atrophic streaks which follow pregnancy, or those which occur in people who, having been fat, suddenly become thin.

In Dealing with Syphilis, What Is Due to Ourselves, to the Patients, and to the Community?

Dr. E. L. Cocks wished to have this subject brought before the Society for discussion. He said that, nine years ago, a Mrs. C. came to him with mucous patches upon the tongue. She then disappeared and, two months later, her daughter came with a chancre of the tonsil. Another daughter, eight years old, then appeared with a hard chancre and mucous patches in the mouth. This girl attended school. The doctor asked, Was it his place to report this to the Principal and have the child excluded from school? What should we do in these cases? A discussion upon this topic was brought up five years ago by a prominent colleague and himself regarding the communion-cups. In the Protestant churches, once a month, the wine-cup is passed from one mouth to another, and no attempt, he said, was made to keep it aseptic. In one of the churches in Harlem, one of his patients, with mucous patches in the mouth, happened to be next to him at the altar taking communion. Since that time the doctor had refused to partake of holy communion. He believed such a condition was very dangerous. He referred to another case, a baby four months old, with typical lesions of syphilis. The father and mother were free from any taint. The baby was cared for by a nurse who was in the habit of placing the nipple of the bottle in her own mouth before putting it into that of the baby. In the nurse's mouth the doctor found mucous patches.

Dr. Lusk thought the doctor's duty was clear and simple. He should notify the Principal of the school that the child was under treatment for a contagious disease and then the Principal would have the Medical Inspector informed and he would have the child taken away from school until cured. He had had occasion to do this and it had worked successfully. There was no question of the doctor's responsibility in the matter; it was shifted to the School Inspector.

Dr. Whitehouse said that so far as individual cases went, it was one's duty to do all one could to protect others and, therefore, children should be kept from school. Regarding the treatment of cases of extragenital chancres the rule to wait until the maculæ or roseolæ appeared should be infringed. In the case of the man presented by him the lesion was a typical one and there was no doubt about the diagnosis, and he should begin at once to attempt to dry up the lesion and then place the patient under vigorous inunctions as quickly as possible. He would also impress upon the man the importance of guarding against infecting others. In just these cases he would always begin mercurialization at once and push it vigorously.

Dr. J. Vanderpoel agreed with Dr. Whitehouse in regard to the institution of early treatment in these cases, especially in children who were so liable to infect others. So soon as the diagnosis was made he thought it to be the physician's duty to at once institute treatment. There were times when the diagnosis was in doubt and then it might be necessary to wait until secondary lesions appeared.

Dr. Cocks said that the child he referred to was running around playing with other children, perhaps swapping candy or chewing-gum. He thought she should be isolated. Regarding the early treatment in such cases he would begin the local, but not the constitutional treatment, not only to see the secondary lesions, but also to convince the patient that he has such trouble.

Dr. Bierhoff said that constitutional treatment should be begun as early as possible. He realized the predicament Dr. Cocks was in and he believed that there should be some method by means of which one could enforce the isolation of such patients who are not only dangerous in the schools but also in the streets and at home; the dangers existed in a good many ways outside the mere contact with drinking-cups. This question of extragenital chancre infection has been considered so important that a special chapter was given to that question in a report of the investigations made by the Russian Government. In the Russian Empire there were remarkably large numbers of cases contracted in a non-venereal manner.

Dr. Lusk said it was understood that Dr. Cocks had exhausted moral persuasion and still the child was sent to school. He believed that the method he suggested would be effective.

A Specimen of Vesical Calculus.—Dr. J. Vanderpoel presented this specimen which he had removed from an alcoholic subject ten days ago by a suprapubic operation which was quite simple. The only thing of interest to which he wished to call attention was that he immediately closed the bladder after the operation. Unfortunately the patient got up a hypostatic pneumonia with purulent expectoration. The wound at this time had almost entirely healed. The stitches were taken out on the fourth day. There was no pus present. The fever that was present was due to the hypostatic pneumonia; the highest temperature reached was 102° F., on the third day; it then fell to 100° F., and has since dropped to normal. The bladder was drained by a sound *à demeure* for one week and a Pathois catheter was then introduced. The calculus was shown very well by the cystoscope and a very good photograph of it was obtained. The photograph was taken by Caldwell several days prior to the operation and it showed the calculus almost of its exact size. The calculus weighed 58 grams and was composed of oxalate of lime and uric acid. A second specimen of vesical calculus was shown by Dr. Vanderpoel. It was interesting in that it showed the nucleus to be composed of carbonate of lime; outside of this, it was made up almost entirely of the earthy phosphates.

Dr. Greene said that there was one point of interest brought out, and that was the question of immediately closing the wound and leaving in the catheter in cases in which the calculus has been removed by the suprapubic route.

Dr. McGowan said that it had always been his custom in healthy bladders, *i. e.*, in which there was no marked change of the mucous membrane and little, if any, pyuria, to close the bladder at once. But, in the cases in which there was a cystitis, with pyuria, he thought it unwise to do so, rather trusting to the granulations to close it.

Dr. Guitéras said he would drain the pus-bladder suprapubically for at least four days. Some sewed these bladders, placing in a gauze drain, leaving it in for two days, with perfect union following.

Dr. Greene believed that it was very unpleasant to drain through the suprapubic wound, owing to the difficulty of keeping it dry and clean. He was informed that the drainage, as devised by Dawbarn recently, worked very well. He asked those present what sort of drainage they found best suited for these cases and also if the position of the patient has anything to do with keeping the wound dry.

Dr. McGowan said that, with the tube of Dawbarn, he had been able to drain the bladder thoroughly; but in order that such drainage should be effective it was very essential that the bladder-walls should be firmly applied about the tube, packing with gauze down

through the suprapubic and bladder wound in order to establish complete closure about the tube; unless that be done there will be more or less extravasation of urine by capillary attraction. After describing the method of using the drainage as devised by Dawbarn, he said that with this method the position of the patient had no influence upon the result. In order that success should follow the use of this special kind of drainage, he thought that one should first be taught its use.

Dr. Pedersen had never seen this drainage in operation, although he had heard that it was eminently successful. If the tube were inserted into the bladder and the bladder-wall were closely applied around it, he did not see that much was gained. Following Gibson's idea, he usually invaginated the wall around the tube, making two series of purse-string sutures, the pocket-purse arrangement, and this kept the parts dry. He had seen such a measure succeed and had also seen it fail because the sutures did not hold; however, when the granulations sprang up and fitted snugly about the tube, success followed.

Dr. Guit  ras sutured the bladder-wall close about the tube. He said it was interesting to know that in so many cases more urine drained away through the suprapubic wound than through the perineal tube. This he thought due to siphonage.

Dr. Greene said that he recently had a case at the Workhouse Hospital; the man had had some sort of a crushing accident. One kidney had been removed, and a suprapubic cystotomy had been performed; the suprapubic wound had never healed and he had been left with a suprapubic fistula. Later operated upon for hernia, all control of the sphincter of the bladder was lost, the urine continually dribbling. He had been operated upon many times, but without success. A catheter was tied in, but the urine drained along the side of the catheter. He noticed that as long as the patient was up and about the wards of the hospital his urine would dribble out through the urethra; but, at night, when he assumed the horizontal position the urine would escape through the suprapubic opening. As a result of his observation of that case he had made up his mind that the best way to keep the urine from the suprapubic wound was to keep the patient in the semi-erect position.

Dr. Vanderpoel said that the cystitis was but slight and not at all chronic. If the cystitis had been marked he would agree with the opinions expressed, that it was absolutely necessary to leave the wound open. In the patient from whom he removed the second stone there was a great deal of cystitis combined with chronic gonorrhea. In this patient he employed perineal drainage, packing the wound and leaving the bladder open. He could not say that most of the urine escaped through the anterior opening. There was, however, a considerable leakage through the bladder wound, which, notwithstanding, healed nicely. In this instance it was fortunate that he used a perineal drainage, because there was found a periperineal prostatic abscess evidently of gonorrheal origin.

Dr. Guit  ras said that in performing prostatectomies through the bladder considerable drainage both through the bladder and through the perineum could be obtained. Of course, in those cases of drainage through the suprapubic tube the siphon method is used and, therefore, more urine comes by that route than through the lower tube in the perineum. One is siphonage and the other leakage. He stated that he had seen a number of cases of prostatic abscess in which there were no symptoms evident; no temperature at all, even in those cases in which he thought the abscess had existed for some time. In one instance he did an external urethrotomy and found one dram of pus, of the existence of which he had not been aware.

Specimen of Calculus of the Ureter.—Dr. Forbes Hawkes presented this specimen, which had been removed from a woman, thirty years old. Two years ago she gave birth to a child and about three or four months after she had had considerable pain in the right side of her abdomen and passed the smaller of the two calculi presented, followed by a little blood, which entirely relieved her pain, and she remained well for several months. Edema of the feet, dyspnea, swollen face, a sort of acne eruption upon the body, loss of appetite and general debility, then began to develop; all these symptoms increased with the diminution in the amount of urine passed. These symptoms lasted for one year; then gradually they all disappeared and she again felt comfortable except for pain in the right side of the abdomen, which was persistent for the four months before operation. She did not fully regain her strength. On vaginal examination what was supposed to be pyosalpinx was found, but the mass felt was of stony hardness. This mass could be felt in the position of the right tube; through the abdomen it could be felt lying half-way between the rim of the pelvis and the body of the uterus, and to the back. A diagnosis was made of calculus of the ureter. The point then arose how to remove this without infecting the peritoneal cavity. The patient was a large woman and the position of the calculus rendered its removal through the perineum or the vagina out of the question. An incision was made below the rim of the pelvis and, with blunt dissection, and by hooking the finger underneath and lifting the mass, the ureter was brought into view and incised and the calculus removed. It was then noticed that no urine flowed through the ureter. It was sutured with black silk and dropped back again and the peritoneum sewn up completely. A perfect recovery followed. One month ago, in making a cystoscopic examination, no urine was found flowing through the right ureter and he thought that the passage of the first stone had caused a stricture and the second stone developed at this site. Gradually the kidney became atrophied and then entirely ceased functioning. The speaker asked those present if they had ever seen as large a calculus of the ureter as the one presented.

Dr. McGowan said he had seen at the Roosevelt Hospital, ten years ago, a calculus of the pelvis of the kidney which Dr. Hartley had removed. This patient had previously been operated upon for caries of the vertebrae. When he came to Roosevelt Hospital Dr. Hartley operated and found a stone in the ureter which was twice as long as its diameter. It reached from the pelvis of the kidney down into the ureter.

THE HARVARD MEDICAL SOCIETY OF NEW YORK CITY.

Stated Meeting, Held April 26, 1902.

The President, William B. Coley, M.D., in the Chair. The paper of the evening, "The Surgical Treatment of Bronchiectatic Abscess of the Lung," was read by Dr. Charles R. L. Putnam.

Forms of Bronchiectasis.—Dr. Putnam said that the dilatation of a bronchus might be caused by the pressure of aneurism, of an enlarged bronchial gland, or of any mediastinal tumor or it might be due to a stricture of a bronchus the causes of which were not understood. Numerous bronchial strictures have been found at autopsies. The dilatation of the bronchi may be simply a form more frequently spoken of as fusiform or cylindrical, or it may be sacculated. As a rule the fusiform dilatation of the bronchi is liable to occur in a number of places in the lung when the condition is present. Sacculated bronchiectasis.

sis may be single or multiple, but is usually single or at most occurs throughout a limited area of pulmonary tissue. The two forms are often associated, the sacculated bronchiectasis, or so-called bronchiectatic abscess, developing in a fusiform dilatation as the result of the persistence of the original etiological condition with the addition, perhaps, of an infectious agent.

Involvement of both Lungs and Frequency.—Tuffier, the distinguished French surgeon, whose work on surgery of the lungs is very well known, found that both lungs were usually involved in the bronchiectatic process when the bronchiectasis was of the simple fusiform variety. Sacculated bronchiectasis, on the other hand, occurs very seldom in both lungs. The disease is much more frequent than has been thought and becomes progressively worse; no medical treatment does anything more than relieve its symptoms, and, as a rule, it does this ineffectively. After infection of the bronchiectatic cavities has taken place, surgery is the only hope of relief. The only form of bronchiectasis possibly amenable to surgical treatment is the sacculated abscess in connection with the disease. When these cavities become secondarily infected, the secretions may be so intensely foul as to render the patient's life very miserable and to make it almost impossible for friends to be near him. Moreover, the cavities may become septic in character and the resultant absorption of toxic material may cause deterioration of the general health and may even give rise to secondary foci of suppuration, as, for instance, brain abscess. There are excellent reasons, therefore, to justify surgical intervention in such cases, and successful drainage of these cavities will confer very great benefit on the patients.

Symptoms and Etiology.—The pulmonary symptoms associated with bronchiectatic cavities are not very prominent. At times there is a certain amount of dyspnea. The physical signs constitute the main features of the diagnosis. Patients are apt to suffer from a bad taste in the mouth, and this is apt to be followed by tendencies to nausea as the result of swallowing the offensive bronchial secretion. The consequent indigestion is prone to produce irritability of temper and sometimes a condition of hebeteude. These cavities occur as a sequela of whooping-cough or as a consequence of latent phthisis; usually their development is absolutely insidious. The first symptom noted is a spasm of coughing followed by the evacuation of a large amount of fluid. The cavity is evidently very insensitive to the presence of secretion and only after it has filled up and the contained material overflows into the neighboring bronchi does reflex coughing begin, during which the cavity is emptied. The odor of the pus may be from sickly sweet to an awful foulness that is almost unbearable. This may be so offensive as to make life in the house with the patients extremely difficult and render a hospital ward almost obnoxious for other patients.

Differential Diagnosis.—The principal conditions that need to be differentiated from bronchiectatic cavities are tuberculous cavities, abscess of the lung, necrosis or gangrene and actinomycosis. It may be impossible to differentiate a tuberculous cavity. Bronchiectatic cavities may become infected with tubercle bacilli and then take on most of the characters of a tuberculous cavity. As a rule, however, there is less fever with bronchiectasis, the patient is not so sick, there is less emaciation, and in ordinary cases no tubercle bacilli can be found in the expectoration. The secretion of bronchiectasis is apt to come up in one large amount at some given time during the day, while tuberculous expectoration has its own easily recognized character. With regard to abscess the history of the case is more acute than that of bronchiectasis, the patient is apt to have a high temperature, the material coughed up is

much less fetid and contains portions of lung tissue. These are never present in bronchiectasis. Another source of confusion may be a hydatid cyst. This is however, especially in this country, extremely rare and the lung is not often affected, being the eleventh part of the body liable to be attacked by hydatids. As a rule there is not so much sputum in pulmonary hydatids and if the cysts should connect directly with a bronchus hooklets may be discovered in the material coughed up. When actinomycosis occurs in the lung in connection with the bronchus, the ray fungus may be discovered in the sputum.

Pathognomonic Physical Signs.—The physical signs of a bronchiectatic cavity are sufficient of themselves to distinguish it from other lesions. When the cavity is full there is a dull note on the chest-wall. When it is empty, as is usually the case after a fit of coughing in the early morning, there is tympany. Not infrequently, however, the tympanic note is modified by a thick infiltration of the cavity walls. This infiltration proves of diagnostic importance when the X-rays are used. While the fluid within the cavity causes very little shadow, the thickened cavity walls may produce a distinct shadow. In twenty-nine cases collected by Tuffier, twenty-one pulmonary lesions were localized by the physical signs in combination with the X-rays. The passage of coarse bronchial râles may show the existence of a cavity but this does not localize the lesion sufficiently for surgical purposes. Aspiration is often of value, but the needle may easily become plugged or it may cause reflex irritation and cough which will empty the cavity and so prevent aspiration from having its true diagnostic significance. As a rule, when the aspiration needle is used, morphine should be given beforehand in order to quiet the irritability and as far as possible prevent the cough from disturbing the condition. Even under apparently favorable conditions it may be seen how illusory the needle can prove, because Tuffier relates a case in which he inserted the needle to the proper depth, as he thought, in order to tap a cavity and found afterward at autopsy that instead of one cavity there were two, separated by a quarter of an inch of solid tissue, and that his needle had penetrated this isthmus of pulmonary tissue. If the aspiration test prove successful, the needle should not be withdrawn, but the surgical procedure should be conducted with the needle as a guide.

The X-Ray in Diagnosis.—Much was expected from the use of the X-rays for the diagnosis of bronchiectasis, but the expectations have not been realized. Only once so far have the X-rays proved of special diagnostic significance and then because of extensive peribronchial inflammation. Tuffier succeeded in localizing tumors of the lungs and hydatid cysts with the X-rays, but was not so successful with bronchiectasis. It seems probable, however, that with the improvement in the technic of the X-rays for diagnostic purposes and the more expert knowledge of the significance of even slight differences in the shadows of radiograms much more definite knowledge will be obtained.

Medical Treatment of Bronchiectasis.—The medical treatment of bronchiectasis has not proved very successful. The most that can be done is to relieve the symptoms. For the fetid odor, inhalations of creosote have been suggested and have given some satisfaction. The injection of carbolic acid and menthol into the cavity has been suggested, but has not proved satisfactory. Murphy's method of allowing air or nitrogen to fill the pleural cavity to an extent sufficient to produce collapse of the bronchiectatic cavity has been employed, it is said with some success. About 170 cubic centimeters of air or nitrogen should be injected every second or third day. The choice between air and nitrogen

does not seem important provided the air is carefully sterilized before being admitted into the pleural space.

Surgical Intervention.—In order to get at the lungs a U-shaped incision should be made and one or more ribs should be excised. The position of the incision will depend on the localization of the bronchiectatic cavity. Sometimes the pleura is adherent, but not always; seventy-five per cent. of the cases in which adhesions of the pleura exist have septic elements in the abscesses. Unless the bronchiectasis is quite superficial, however, adhesions in the pleura seldom exist. If the pleura be normal, the wound should be packed until adhesions have taken place. If the lungs should collapse during operation it would be practically impossible to find the locality in which the cavity existed. Instead of waiting for adhesions the two pleural surfaces may be sewn together, but very superficial stitches must be used to avoid the danger of sepsis. Beck has suggested that all cutting into the lungs be done with the actual cautery. The danger of bleeding is quite a serious consideration in these cases. In a chronically inflamed lung, vessels as large as the radial arteries may be present. The cautery should not be heated very hot, but kept at a dull red heat, which compels very slow progress in the incisions, but sears the bleeding tissues. In the end time is saved because there is no bother with the control of hemorrhage. The cautery becomes coated with material and must be withdrawn every few moments in order to burn it clean; this lengthens the operation materially, but is the safest method of procedure. After the use of the cautery to evacuate the bronchiectatic cavity, healing is apt to be slow. It may take any time from two and one-half months to two years. In the abscesses with long course there is apt to be the complication of secondary infection with tubercle bacilli; in cases, however, that do not heal for over a year the patient may be able to return to work after some months.

Irrigation During and After Operation.—The use of irrigation during the operation is contraindicated. By a mistake during the course of Dr. Putnam's operation, his assistant allowed some water to flow into the wound and some blood and water appeared in the mouth. This did not seem to produce any serious effect, however, and did not set up the spasmodic coughing that might have been expected. For washing out after the operation mild solutions should be used. A very curious thing occurred in the practice of a Los Angeles surgeon: He operated upon a bronchiectatic abscess, and as the patient was very much run down, the pulmonary tissues refused to heal kindly. The patient was advised, therefore, to be much in the open air and accordingly went to live on a ranch. While away from the doctor the patient used a very strong solution of bichloride, of course, without the doctor's advice, and in spite of the evil effects that might have been expected to follow began to improve almost at once and when he came back to consult the physician after six months the lung condition was entirely healed.

Illustrative Case.—Dr. Putnam presented a child on whom he had operated. It is three years of age and suffered last year from pneumonia. After the pneumonia a condition of dilated bronchi developed. One of the cavities at least became affected by some septic material and the growth of this made the secretion extremely foul. The odor was so bad that even the mother could not sleep near the child; no one else could be gotten to attend her. The child frequently vomited as the result of this foul odor and emaciation set in. The largest sized cavity was localized partly by physical signs and a small deepening of the shadow under the X-rays. An incision having been made down to the pleura, an aspiration needle was inserted in several

places until finally several drops of very foul-smelling secretion were obtained. Using the needle as a guide the cautery was employed to evacuate this cavity. The cautery had to be inserted to the depth of about two inches, but the lung in its contraction drew well inward towards the needle. The cavity proved not to be larger than a raspberry. During the operation some blood appeared at the mouth and the operation was stopped. For a week after this operation the patient was somewhat better, coughed up less material and this was much less offensive. After a time, however, some of the old symptoms reasserted themselves and the patient suffered from diarrhea. After this had been improved another operation was done, the cautery being inserted still deeper into the pulmonary tissue and another small cavity being evacuated. Since then the patient has constantly improved in health and the expectoration is no longer offensive. The lung still contains on both sides a number of bronchiectatic dilatations, but the child has improved so much in general health that the parents consider her cured. From a moping child without ambition, she has now become lively and active and is no longer as irritable as before. There is still considerable secretion, but it is of mucous character, containing no bacilli and it is not offensive in odor.

Surgical Intervention.—In discussing the case Dr. Schram said that as bronchiectasis is hopeless of treatment by medical means, it is indeed gratifying to find that surgery may be of some benefit. Dr. Schram considers that, besides the differential diagnosis of conditions mentioned, it is necessary to exclude localized empyema in order to avoid error. He does not consider that the X-rays can be of much benefit in these cases and certainly no surgeon would feel justified in operating with no more reliable data than those given by the ordinary radiograph.

X-Rays in Bronchiectasis.—In closing the discussion Dr. Putnam said that it is not the fluid in the bronchiectatic cavities which causes the shadow in the radiograph, but always the peribronchial inflammation. It is then only in reasonably long-standing cases, in which a considerable inflammatory reaction has led to thickening of the layers of the bronchiectatic cavity, that there is hope in the diagnostic value of the X-rays. In the present case, however, there was an area of distinct deepening of the shadow; not enough in itself alone to justify operation, but sufficient to direct the insertion of the aspirating needle and thus ultimately lead to the detection of the exact location of the cavity sought. In this case the selection of the cavity to be drained in preference to others was influenced by the fact that after a number of impressions of the needle, this was the only cavity that contained an extremely fetid secretion. It is important that the operation be done with a cautery at a low heat. It took twenty-five minutes to burn a way into the tissues for two inches in this case, but there was no bleeding and no other complication of the operation. The patient was examined by those present and proved to be in excellent general condition despite the existence of some bronchiectasis in both lungs.

Gangrenous Appendicitis; Two Typical Cases.—Dr. John B. Walker gave the details of two typical cases of gangrenous appendicitis in which prompt surgical intervention probably saved the patient's life. In neither case was there very much to call attention to the dangerous condition that existed, and it was only the prompt submission of the patients and their physicians to the realization that such cases belong essentially to the surgeon that gave the opportunity for the saving of life. The first patient was operated on after there had been about thirty-six hours of diarrhea with some febrile temperature and some not very marked pains on the right side. The temperature was about 100° F. and

the pulse scarcely more than 90 when the symptoms were worst. About 3 P. M. of the second day the temperature fell to normal and the condition was diagnosed as a simple catarrhal appendicitis and all danger considered to be over. At 11 P. M., when the physician saw the patient, he was resting quietly and there seemed no reason to anticipate any serious turn in the disease. Just as the physician was preparing to leave the house, however, there was a sudden cry from the patient, who was taken with severe pain in the appendiceal region; in a few minutes a chill developed and the temperature ran up to 101° F.

Treatment of the Condition.—There seems to be no reason to doubt that some serious process more or less fulminant in character was at work in the neighborhood of the appendix. Two hours afterward, therefore, the patient was operated upon after due preparation, and the appendix was found gangrenous and on the point of perforation. The appendix was removed, the patient made a good recovery and there have been no symptoms since. In this case there was no history of any previous attack and no symptoms pointing to any inflammatory condition existing in the right iliac fossa. The patient was without the usual history of precedent consultation and it would have been very difficult to assign any reason for the occurrence of the gangrene, except that an insidious inflammatory process had gradually led to the shutting-off of the blood-supply of a rather long appendix.

Fulminant Insidious Case.—The second patient with a similar history was a woman of thirty-five who, with no previous history of any appendiceal symptoms, was taken with a pain in her right side. She bore this for some time and, as it seemed to be somewhat relieved, she went out on an errand. The pain became very severe and nausea set in, so that she was compelled to return to her house and take to bed. When first seen she had a pulse only very slightly above normal and practically no temperature. The pain had, however, become exquisitely severe and there was marked tenderness over the appendiceal area. Suspicions were aroused, therefore, of an acute affection of the appendix, and careful leucocyte counts were made. The first showed 13,000; a second count, made about six hours later, showed a still higher leucocytosis, the number reaching 17,000. At this time the pulse-rate was less than 75 and the temperature was about 99.2° F. Notwithstanding the patient's good general condition and the absence of any disturbance of the pulse or temperature, the intense pain and the presence of the leucocytosis seemed to justify at least an exploratory operation. An incision was made in the right iliac fossa and the appendix was found enlarged, tense, with exudative material, covered with lymph and gangrenous at its base. The specimen was submitted by Dr. Walker for inspection. The lesson of these cases would seem to be that when there is a strong suspicion of the existence of tuberculosis, if the patient be in favorable conditions for an operation, life will be saved and no added risks incurred if the surgeon proceeds to make at least an exploratory incision.

In discussing Dr. Walker's cases, Dr. Coley said that fulminant appendicitis of the gangrenous type is an extremely difficult problem to deal with, and Dr. Walker's cases are illustrative, not only of this difficulty, but of a very happy solution of it.

Suprapubic Varicosities.—Dr. William B. Coley gave some details of a case of varicosities occurring in the lower part of the abdomen just above the pubic region in the veins of the abdominal wall. This form of varix is extremely rare; in all the patients with varicosities who have come to the Hospital for the Ruptured and Crippled in about fifteen years only two other cases

have been reported. The patient was a boy of eighteen who had also some varicosities of the leg. The tumor produced by the varicosities was so large that the patient had to wear an abdominal belt. The young man had suffered from attacks of pain in the right iliac fossa and some febrile temperature that indicated the existence of recurrent appendicitis. The operation for the relief of the varicosities and that for the chronic appendicitis were done at the same time. The appendix was found completely buried in lymph and bound down, and it was evidently only a question of time when there would have been severe acute exacerbation with probable rupture and the production of pus. The varicose veins were removed by excision and ligation. There is no typical operation for this form of varicosities described in any of the text-books. It seems not improbable that the condition will recur, since there seems to be a tendency for the veins in various parts of the patient's body to dilate very easily whenever there is any back pressure in them. The condition of the patient since the operation has been very good, and relief from the bothersome symptoms due to varicosity can be expected for several years at least.

NORTH BRANCH PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, Held April 17, 1902.

The President, A. M. Eaton, M.D., in the Chair.

Microscopic Diagnosis of Blood Abnormalities.

Dr. W. Wayne Babcock stated that there were four things to be considered in this connection: (1) The amount of hemoglobin; (2) the number of red blood-corpuscles; (3) the number of white corpuscles, and (4) the determination by a method of staining and microscopical examination of the shape and quality of the corpuscles. The estimation of the hemoglobin by the use of the Talquist scale was thought to give sufficiently correct results for general purposes, and when more accurate results were required Gower's instrument was recommended. For general use in estimating the corpuscular richness of the blood Oliver's instrument was recommended, and when a more accurate result is desired, of course recourse will of necessity be had to one of the counting methods. Attention was directed to the importance of having the blood spread very thin on the slide, as well as to the necessity of having the skin perfectly clean before the puncture is made. Before staining the blood should be set on the slide either by heating or by some chemical process. The various methods of staining were given in detail, and as part of the information to be gained by this examination were enumerated the character, size, and shape of the red cells and whether nucleated or not, thus indicating the anemic or other character of the patient. Apart from this, the observer is also able to obtain a fairly accurate idea of the number of white corpuscles present and draw deductions therefrom, which information is particularly valuable in cases such as tumors, in which it is not known whether it is an abscess or some other kind of a growth, the indications being very much in favor of the former if the number of white cells be increased. The differential diagnosis of typhoid fever and appendicitis was also cited as an instance in which this information might be particularly valuable. The method of staining by the use of Ehrlich's triple stain was especially commended for its simplicity.

The Use of Simple Microscopic Methods.—Dr. Robert L. Pitfield urged the importance of more general use of the microscope in order to confirm the clinical diagnosis. Attention was directed to the necessity of the examination of sputum in all cases in which tuber-

culous involvement was suspected, the method recommended being staining with carbol-fuchsin and methylene blue. Numerous cases were cited, which had come under the author's observation, in which the diagnosis was established solely by this means. Attention was directed to the value of a thorough microscopical examination in conjunction with the chemical urinalysis in the diagnosis of nephritis, and a case was cited in which a careful microscopical examination of the sediment by staining had revealed the presence of tubercle bacilli, although the patient presented no other symptoms of tuberculosis. In the differential diagnosis of diphtheria and tonsillitis, the reader expressed the opinion that about 72 per cent. of the cases could be correctly diagnosed by the examination of a simple smear of the discharge from the throat; while the use of the culture was recognized as a more certain method, it was thought that the latter procedure was beyond the reach of the average practitioner. The value of the examination of the stools and of the discharge in cases of suspected venereal disease was also commented upon.

The discussion was opened by Dr. Judson Daland, who stated that he believed that Fleischl's hemometer modified by the little slit cap was the best method of estimating the amount of hemoglobin. In regard to the estimation of the corpuscular richness of the blood, he stated that, while a great step in advance had been made in this direction, he felt that there was still much to be desired so far as accuracy was concerned. Regarding the microscopical examination of the blood the speaker stated that he had given considerable attention to the examination of fresh blood, which he did not feel was practised to as great an extent in this country as might be desirable. In his opinion much valuable information could be obtained by observing the manner in which crenation and rouleauing take place and the manner in which the fibrin is formed. The importance of spreading the blood very thinly on the slide was commented upon and the fact noted that it was possible to conduct the examination for from twenty-five to thirty minutes before crenation interfered. This method was also recommended in searching for the malarial parasite and the spirillum of relapsing fever.

The speaker cited a case which had recently come under his observation presenting all the physical symptoms of pulmonary tuberculosis, but in which the sputum, although frequently examined by different observers, showed no tubercle bacilli. The case eventually proved to be one of aortic aneurism.

Attention was directed to the diagnostic importance of considering the clinical symptoms in conjunction with the results of urinary examinations, and a case was cited in which examination of the urine after an operation for a dislocated kidney had been performed by fixing it to the posterior wall of the abdomen with three sutures, revealed both the chemical and microscopical symptoms of hemorrhagic nephritis, which disappeared in a few days.

Laboratory Methods.—Dr. Frederick A. Packard remarked upon the contrast between the present laboratory methods and those in vogue about twenty years ago. At that time the urinary examination consisted in a test for sugar and albumin and a microscopical examination for casts, mucus and pus. Only on rare occasions were blood-examinations made, the principal instrument in use at that time for the estimation of the hemoglobin being Gower's. While at the present time, it is possible to discover a number of bacteria in the sputum and thus gain assistance in a variety of diseases in addition to tuberculosis, such as pneumonia and gonorrhea, at that time the tubercle bacilli and yellow elastic tissue were the only objects searched for. Attention was directed to the importance of the ex-

amination of the stools, and especially was this thought to be important in cases of children who were supposed to be suffering from worms. The value of the Widal reaction, and the examination of the exudate from the throat as a means of differentiating between typhoid fever and diphtheria was remarked, as was also the importance of lumbar puncture and the examination of the fluid in cases of tuberculous meningitis. The liability of error in making the diagnosis of Bright's disease solely upon the presence of albumin and casts in the urine was commented upon and the importance of considering these factors in conjunction with the clinical symptoms was remarked. When albumin is persistently present in the evening urine and absent or present in very much smaller amount in the morning specimen, it was thought to suggest either stone in the kidney or movable kidney.

Blood-Examination in Malaria.—Dr. Joseph Sailer emphasized the importance of this, and stated that he considered examination of fresh blood of much value. In the opinion of the speaker the Widal test will give a positive reaction in 95 per cent. of all the cases of typhoid when but a single test is made during the early period of the disease, while if the tests are continued at intervals during the progress of the affection the proportion will be very much larger. Reference was made to the importance of microscopical examinations in differentiating diseases due to the colon group of bacteria, and attention was called to the regularity with which cholera is diagnosed by this method in the Orient. The investigations of Bordeaux with the various blood-serums were referred to and their value in medico-legal work, as well as their diagnostic importance, was remarked upon.

Dr. Augustus A. Eshner considered that in cases in which albumin and casts are present in a patient's urine, a distinction should be made between the cases in which they are constantly present and those in which the condition is transitory, as in the latter instance he feels that but little importance should be attached thereto. In regard to the estimation of the corpuscles in the blood, the speaker stated that his experience had been principally with the Thoma-Zeiss instrument and that for ordinary purposes he considered that not only can one estimate the number of red cells, but one can also form an approximate idea of the number of white corpuscles by the use of this instrument. In cases in which diphtheria is suspected the speaker stated that he believed it was just as important to examine the nasal discharges as the exudates from the throat, as in his opinion nasal diphtheria is not so rare as is sometimes supposed.

Urine Examination.—Dr. M. H. Fussell remarked upon the great value to be derived by the general practitioner from the examination of the urine of his patients, as in his opinion many cases of Bright's disease and other affections are not recognized until it is practically too late to be of any service to the patient, when the physician depends entirely upon the clinical symptoms. The speaker also stated that in his opinion in every case of a chronic cough the sputum should be examined, even although the physical signs of tuberculosis do not happen to be present. In the examination of the exudates from the throat for the diphtheria bacillus, he felt that cultures are far more accurate than the microscopical examination of a simple smear of the discharge on a cover-glass, and he does not feel that it is safe to exclude the disease even although a negative result is obtained by the latter method. The Talquist method of estimating the hemoglobinular richness of the blood was referred to and while it was admitted that it was not so accurate as the Dare or the Fleischl method, the advantage claimed for it was that

it takes but a very short time and is sufficiently correct for the majority of cases. In all cases in which malaria is suspected it was recommended that a microscopical examination of the fresh blood be made.

BOOK REVIEWS.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY. Being a Yearly Digest of Scientific Progress and An Authoritative Opinion in all Branches of Medicine and Surgery, Drawn from Journals, Monographs and Text-Books of the Leading American and Foreign Authors and Investigators. Collected and Arranged Under the General Editorial Charge of GEORGE M. GOULD, M.D., Vol. II., Surgery. W. B. Saunders & Company, Philadelphia and London.

THIS year's volume of the American Year-Book on Surgery is very well made. The only change in the list of contributors is due to the absence of Dr. W. W. Keen from the United States, and he is very well replaced by Dr. J. Chalmers Da Costa. There is an excellent review of the various operative procedures for cancer; how radical these are may be judged well from the description of Lennander's method of removing cancer of the breast. The incision for this method begins at the ensiform cartilage and is carried to a point just below the head of the humerus. Notwithstanding the extensive operations that are performed, the prognosis for cancer cases operated upon is not very promising. It is evident that successful investigations giving the cause of cancer and the possible prophylaxis of the affection will be supremely welcome. The present volume contains chapters on obstetrics as well as on gynecology, and some of the recent literature reviewed will be found of very practical significance. There is the report of a case of xiphophagus twins who were separated by operation. The band joining the children was of greater extent than that of the famous Siamese twins. Not only the livers, but also the pleuræ, the pericardial sacs and the mesenteries of the two children were found to be continuous. One of the twins has survived the operation for many months; the other died at the end of six days. In the case of the famous Siamese twins, the existence of a portion of liver tissue in the band uniting them, deterred surgeons from making any attempt at separation.

There is an excellent discussion of menstruation and its disorders that is of importance not only for surgeons but medical men generally. Some of the newer ideas from comparative physiology, and the question of the influence of the thyroid and its extracts on the sexual and menstrual life receive due notice.

SYPHILIS, A SYMPOSIUM. E. B. Treat & Co., New York.

THIS little book includes a series of contributions from men who are well known specialists in syphilology and contains some very interestingly practical material. Professor Fournier of Paris discusses the clinical characteristics of syphilitic chancre; Dr. L. Duncan Bulkley of New York discusses unrecognized syphilis of the nervous system; Dr. J. D. Thomas of Pittsburg tells how best to diagnose communicative syphilis in a wet-nurse; Dr. Robert H. Greene of New York discusses the treatment of syphilis. Most of these subjects have come to be of even more practical importance than ever in recent years. The gathering together into a little book of this kind of a series of papers that show various aspects of the subject seems commendable, and the book will doubtless prove a suggestive manual for general practitioners to whom problems in syphilis come rarely, yet must be answered.

HAND-BOOK OF BACTERIOLOGICAL DIAGNOSIS FOR PRACTITIONERS. Including Instructions for the Clinical Examination of the Blood by W. D'ESTE EMERY, M.D., B.Sc., London, Lecturer on Pathology and Bacteriology in the University of Birmingham. P. Blakiston's Sons & Co., Philadelphia.

GENERAL practitioners are coming to recognize more and more the necessity for definite bacteriological knowledge if they are to employ properly those diagnostic aids that the development of the new science of bacteriology has recently brought to medicine. Dr. Emery's hand-book would seem to supply the information needed in a very simple, concise yet complete manner. Each of the infectious diseases is discussed as completely as seems necessary for diagnostic purposes, and the colored plates give an excellent idea of the appearance of bacteriological specimens. There is a number of such books for the profession, but Dr. Emery's book will find a place for itself because of its suggestive brevity, yet thoroughly practical and scientific character.

DIRECTIONS FOR CLASS WORK IN PRACTICAL PHYSIOLOGY. ELEMENTARY PHYSIOLOGY OF MUSCLE AND NERVE AND OF THE VASCULAR AND NERVOUS SYSTEMS. By E. A. SCHAFER, LL.D., F.R.S., Professor of Physiology in the University of Edinburgh; Formerly Jodrell Professor of Physiology in University College, London. Longmans, Green and Co., New York, London and Bombay.

THIS book is compiled especially for the medical student's use in the laboratory, the material having been used for this purpose in the University College of London for many years. It is written in a very clear and concise manner, in large type and upon very good paper. It gives explicit directions which are illustrated by diagrams and are sufficiently clear to direct the work of the average medical student in the elements of experimental physiology. Among the experiments given may be mentioned the effect of heat, cold and certain drugs, such as curare and veratrine on muscular contractions; also the effect of fatigue and the extensibility of muscle upon the character of its contraction; the rate of transmission of nerve impulses; Pfliüger's law and numerous experiments upon the heart muscle, ending with that of perfusion of the frog-heart.

MANUAL OF PHYSICAL DIAGNOSIS FOR THE USE OF STUDENTS AND PHYSICIANS. By JAMES TYSON, M.D., Professor of Medicine in the University of Pennsylvania and Physician to the University Hospital; Physician to the Philadelphia Hospital. P. Blakiston's Son & Co., Philadelphia.

FOR several years this convenient manual has been relied upon by most students of medicine for their guidance in laying a foundation for the study of physical signs and in the appreciation of the value of a thorough examination of the patient. Almost all mistakes in diagnosis depend not so much upon the ignorance of the physician as upon his lack of thoroughness and systematic examination which will reveal signs that are easily appreciated by any physician if his attention be called to them. One of the great benefits, therefore, to be derived from this book is the training which it affords the mind of the medical student in pursuing a thorough and careful examination of the patient. Only a small amount of new material has been necessary to bring this edition up-to-date, for it has followed the third edition so closely; but numerous revisions have been made throughout the work and short chapters upon blood, sputum and stomach-contents have been written. Its usefulness is not by any means confined to the student, for the various diseases of the heart and lungs are exposed in a very simple but complete manner.

A BRIEF MANUAL OF PRESCRIPTION WRITING IN LATIN OR ENGLISH, FOR THE USE OF PHYSICIANS, PHARMACISTS, AND MEDICAL AND PHARMACAL STUDENTS. By M. L. NEFF, A.M., M.D. F. A. Davis Company, Philadelphia.

MANY medical and pharmacal students have never had a Latin education, and even those who have are likely to forget the details of declension and conjugation. In prescription writing only a very small knowledge of Latin is required, at any rate, and can be easily mastered by any one if the essential points be explained and illustrated. This book gives a very simple presentation of the subject, enabling a person to write an intelligible and correct prescription. A small Latin-English vocabulary with Latin phrases and their abbreviations is appended. A list of incompatibles and a table of doses of remedies most frequently administered are also given.

When it is recalled that many of the complex reactions in the human body are brought about by the action of ferments, it is manifest that all the light that can be obtained on their peculiar properties is necessary in order to unravel many of the unknown secrets of digestion, of the action of the internal secretions of the pancreas, of the adrenal gland, of the thyroid, perhaps of the spleen, and of the blood. While the ferments of the human organism are not here dealt with in detail, the general conceptions of enzyme action are so well sketched that this work would make for the thoughtful practitioner an excellent introduction into a fascinating field.

THE TREATMENT OF NEURASTHENIA. By A. PROUST, Professor at the Faculty of Medicine in Paris, and GILBERT BALLEST, Professor Agrégé at the Faculty of Medicine in Paris. Translated by PETER CAMPBELL SMITH, Henry Kimpton, London.

Proust and Ballet's volume on the Treatment of Neurasthenia is very well known in the original French. It is an eminently practical little work and is typical of the French tendency to give detailed practical hints in therapeutics.

An extremely interesting feature of the book is the fact that the authors give due credit to American writers for their important original work with regard to neurasthenia. They mention the essays on various nervous conditions evidently of neurasthenic character that preceded Beard and Weir Mitchell's work, but give these observant clinicians due credit for priority in the principal parts of the field. One of the most important chapters in this little book is that on Prophylaxis, which includes the physical and moral education of children who are liable, because of heredity, to become the subjects of neurasthenia.

LECTURES ON CHEMICAL PATHOLOGY IN ITS RELATION TO PRACTICAL MEDICINE. Delivered at the University and Bellevue Medical School, New York City. By C. A. HERTER, M.D., Professor of Pathological Chemistry, University and Bellevue Medical School, New York. Lea Brothers & Co., New York and Philadelphia.

THIS book is a memorable one. Gathered as it has into an easy and convenient compass the fundamental facts of perverted chemical activities resultant from disturbed physiological functions, it is the only work of its kind. It is a pioneer in the field and a worthy leader.

Little by little it is beginning to be realized that the medical questions of the future are to concern themselves more and more with cell chemistry and the "cellular pathology" of Virchow is to be replaced by the "cellular chemistry" of many modern Masters. At the present time the facts are being gathered, generalizations of

a wide and important nature will follow; but of the work of the present day, of the chemical defences of the human body, the chemical fate of the body foods, the iron of the blood, putrefactive and fermentative processes, pathology of gastric digestion, chemical pathology of hepatic disease, diabetes, starvation, under-nutrition and obesity, there has been no authoritative and really modern exposition before the appearance of Dr. Herter's work.

We foresee thousands of original articles flooding the medical journals of this country derived from this book and we can almost hear the lecturers in the medical schools of the country pouring forth interesting facts culled from this work, which is a veritable *vade mecum* of sound practical teaching based on the most intricate and scientific chemical research.

We are prepared to state that from the standpoint of the understanding of the problems here dealt with that no work in any language is its equal and we almost hold it to be a duty to himself and his conscience that the progressive practitioner should know its teachings since they are so readily available.

BOOKS RECEIVED.

The MEDICAL NEWS acknowledges the receipt of the following publications. Reviews of those possessing special interest for the readers of the MEDICAL NEWS will shortly appear.

PHILADELPHIA HOSPITAL REPORTS. Vol. IV., 1900. 8vo, 322 pages. Illustrated.

A MANUAL OF TOXICOLOGY. By Dr. Albert H. BRUNDAGE. 12mo, 354 pages. New York.

THE MEDICAL TREATMENT OF GALL-STONES. By Dr. J. H. Keary. 12mo, 125 pages. P. Blakiston's Son & Co., New York.

LABORATORY WORK WITH MOSQUITOES. By Dr. William N. Berkeley. 12mo, 112 pages. Illustrated. Pediatrics Laboratory, New York.

THE CASE OF DESTITUTE, NEGLECTED AND DELINQUENT CHILDREN. By Homer Folks. 12mo, 250 pages. The Macmillan Company, New York.

LABORATORY GUIDE IN ELEMENTARY BACTERIOLOGY. By W. D. Frost. 8vo, 355 pages. Illustrated. Published by the author, Madison, Wis.

ESSAYS AND ADDRESSES. By Sir James Paget. Edited by Dr. Stephen Paget. 8vo, 445 pages. Longmans, Green & Co., New York, London and Bombay.

EINFÜHRUNG IN DIE PHYSIKALISCHE ANATOMIE. By Dr. Hermann Triepel. 8vo, 232 pages. Illustrated. J. B. Bergmann, Wiesbaden. G. E. Stechert, New York.

ATLAS AND EPITOME OF OTOTOLOGY. By Gustav Brühl. Edited by Dr. S. MacCuen Smith. 8vo, 292 pages. Illustrated. W. B. Saunders & Co., Philadelphia and London.

DIE OTITISCHE EKANKUNGEN DES HIRNS, DER HIRNHAUTE UND DER BLUTLEITER. By Dr. Otto Körner. 8vo, 216 pages. Illustrated. J. F. Bergmann, Wiesbaden. G. E. Stechert, New York.

ATLAS AND EPITOME OF OPERATIVE SURGERY. By Dr. Otto Zuckerkandl. Edited by Dr. J. Chalmers Da Costa. 8vo, 410 pages. Illustrated. W. B. Saunders & Co., Philadelphia and London.

TRAITÉ DE MÉDECINE ET DE THÉRAPEUTIQUE. Tome IX. Maladie du cerveau, de l'isthme, de l'encéphale, des méninges encéphaliques, de la moelle épinière, et des méninges spinales. Edité par P. Brouardel et A. Gilbert. 8vo, 996 pages. Illustrated. J. B. Baillière et Fils, Paris.